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Willis O'Brien — Creator of the Impossible.4

It was mere chance that first led Willis O'Brien to consider the possibilities of producing cartoon-style animation with three-dimensional puppet figures. And while nearly seven decades have passed since his earliest attempts to imbue inanimate objects with a life of their own, the special effects form he introduced into the vocabulary of film has endured through the years relatively unscathed by the ravages of time. *The Lost World*, *King Kong* and *Mighty Joe Young* were all high water marks in the area of effects-oriented entertainment, and Willis O'Brien was at the heart of each. Though too many of his most ambitious projects — *War Eagles*, *Guangji*, *Valley of the Mist* — were never to be realized at all, even his decidedly lesser efforts conveyed a sense of style and charm that was characteristically his own. But in counterpoint to his many triumphs, there is a darker side to the life and times of Willis O'Brien that carries with it an implied indictment of a user industry that fails to adequately recognize the strengths — and perhaps more importantly, the weaknesses — of some of its most gifted artists. On this, the eve of the twentieth anniversary of his death, Willis O'Brien's singular career is reexamined in detail, for he left behind him not only one of the great film classics of all time, but also a rich legacy of cinematic wonders and lasting inspiration. *Article by Don Shay.*

FRONT COVER — Kong places his blonde beauty in the nook of a tree in *King Kong*. Jill Young's curious pet examines some chickens in *Mighty Joe Young* — BACK COVER.

WILLIS O'BRIEN CREATOR OF THE IMPOSSIBLE

article by
Don Shay



Willis O'Brien had been interested in boxing for years, so it was not surprising one afternoon that he found himself idly fashioning a small prizefighter from modeling clay. This momentary diversion, however, was interrupted by a hearty challenge: "Bet mine can lick yours!" O'Brien glanced up to find one of his coworkers also modeling a fighter. The challenge was accepted without hesitation and, to the amusement of the others in the shop, the two pliant pugilists were soon battling fiercely — with considerable assistance from their managers.

It was from this chance bit of horseplay that the seed of creation was implanted in Willis O'Brien. As he adjusted and readjusted his clay fighter into offensive and defensive positions, the idea came to him of using three-dimensional models in place of traditional two-dimensional drawings to produce a unique new form of motion picture cartoon. The idea was to become reality. After years of drifting aimlessly from one unsatisfying job to the next, Willis O'Brien had discovered, quite by accident, the calling to which he would devote the remainder of his life.

Twenty-eight years before, on March 2, 1886, Willis Harold O'Brien had been born to William Henry and Minnie Gregg O'Brien in Oakland, California. William O'Brien, a self-educated man and a noted etymologist, operated a military academy and a hotel at various times during Willis' youth, and for fifteen years held the office of assistant district attorney in Oakland. Willis' mother, a sensitive and highly creative person, spent much of her time writing poetry and plays for children.

Willis, a red-haired, blue-eyed youth, was the fourth of six children. His greatest admiration was for his oldest brother, Gregg. Gregg was a personal friend of adventure-writer Jack London; and though Willis never met London, it was partially due to this indirect association that he grew to love the beauty and adventure of the wilds. Willis had another older brother, Douglas, and an older sister, Dorothy. He also had two younger brothers, Meredith and Malcolm. Malcolm, in fact, was a mathematical prodigy who could solve algebra problems at the age of six, but whose possibly brilliant future was tragically obliterated in a fatal fall from a wagon.

Although there were numerous acquaintances in Willis' formative years, his best friend at the time was Jack Kernan, who was later to become Jack Dempsey's fight manager. One day, while the two

boys were playing along the Oakland estuary, Kernan, who could not swim, slipped and fell into the water. Willis quickly grabbed the nearest available object — the wheel from an old baby carriage — and held it out to the floundering youth. Kernan managed to grab the rim and Willis pulled him ashore. As a reward, the child's grateful parents presented Willis with a dime.

Though Willis played routinely with his childhood companions, an occasional longing for solitude was not uncommon. At such times he would often make the ferry trip over to San Francisco, where countless hours would slip away as he watched with fascination the loading and unloading of the great sailing ships. For Willis, even these tranquil outings were laced with undercurrents of excitement and danger. Tales of boys being shanghaied and taken to the Orient were common lore, and even the most casual of glances from the coarse-looking sailors — at least to an imaginative youth — seemed fraught with malevolence. Willis kept his distance.

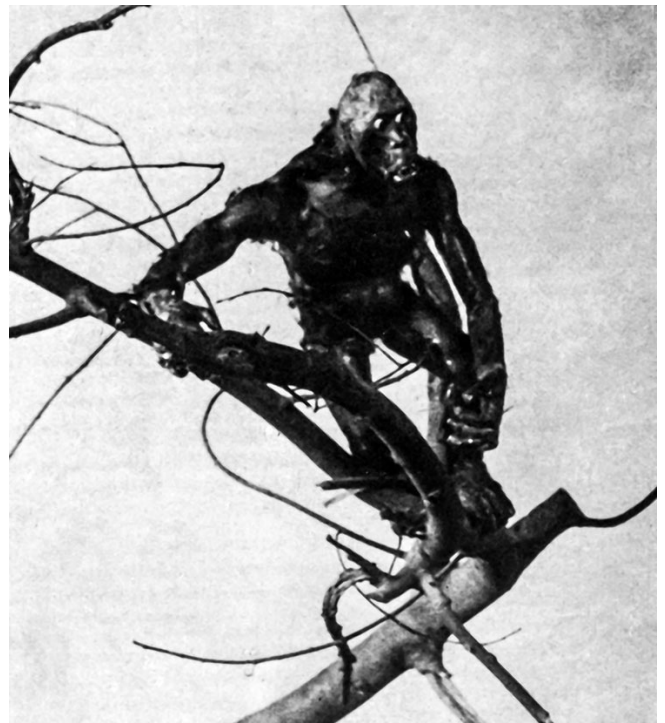
For reasons which were nebulous at best, Willis made several early attempts to run away from home. He was no more than ten when his first excursion carried him across San Francisco Bay. At the time, the area was rife with oyster beds, and also with smalltime oyster poachers out to capitalize on the natural abundance. Willis hitched a ride on one of the oyster boats over to Sausalito, and then made his way north to Vallejo where his aunt and uncle lived on a ranch. Once there, he hid under a stone watering trough across from the house until he managed to be discovered. No stranger to Irish blarney, Willis had heard his aunt singing in the house, and his subsequent assertion that he thought it was the angels singing served to break the ice and soften their censure. Willis was taken in, fed, and then sent on his way home again.

The O'Brien family had considerable wealth — enough so, at least, to hire Swedish nurses to care for the children, a situation which accounted for the fact that both Willis and Doug spoke with Swedish accents in their younger years. However, through unfortunate investments and general poor luck, the O'Brien family was forced into near-poverty when Willis was about eleven years old. The niceties which Willis had come to expect suddenly disappeared; and resenting what appeared to be his family's neglect, he ran away to find work on various cattle ranches. Willis returned home several times, but his frequent departures interfered with his formal schooling and the cowboy dialect he quickly adopted was a source of constant criticism from his refined and well-educated family. As a result, he spoke little, and then only with cautious effort since he soon grew to feel that he had to think out every word in advance — a self-conscious habit he was to retain for the rest of his life. In the months and years that followed, Willis' passive withdrawal from his family continued; and at thirteen, he resolved to leave home for good.

Willis succumbed at once to the lure of the cowboy life, quickly learning to ride and rope with the best of them and finding ample opportunity to demonstrate his skills at numerous small ranch rodeos. By the age of sixteen, he had managed to accumulate eight horses and the other trappings of his trade, only to lose them all one night in a ruinous attempt at mastering the art of draw poker. Disheartened and discouraged, Willis returned south to the Bay Area; but his pride prohibited him from going home. Instead, he trudged from one employment office to the next, determined to make it on his own. Finally he discovered an agency that was recruiting men for jobs up north. They gave him a blanket and sent him off to a 15/-a-night, flea-infested flophouse where he declined even to remove his shoes for fear of their being stolen. There Willis existed for a few days until the train that was to ship him and the other recruits up north finally got under way.



Willis O'Brien as a child — circa 1893.

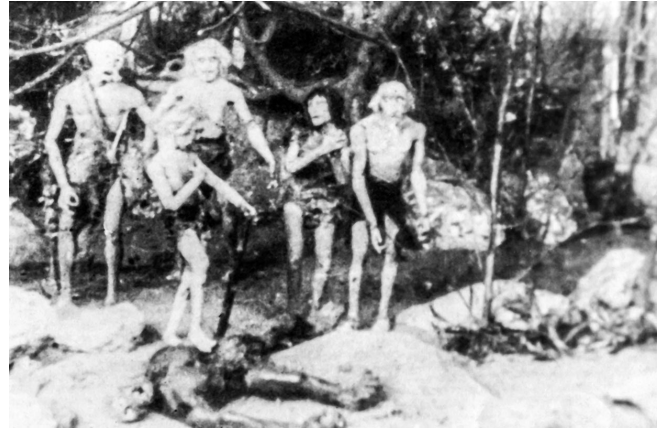


*After a brief test to determine the feasibility of animating three-dimensional puppet characters, O'Brien produced his first prehistoric comedy, *The Dinosaur and the Missing Link*, in 1915. His figures were sculpted in clay over jointed metal skeletons, and covered with a thin sheet of rubber and bits of fur. Sets were assembled primarily from rocks and pieces of natural vegetation.*

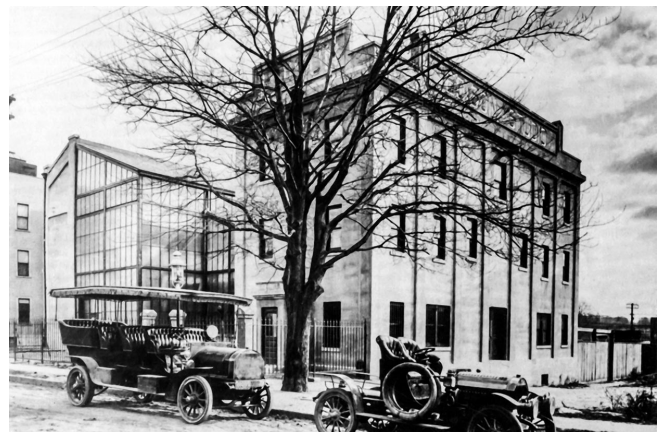
Though his previous excursions had tended to mature him far beyond his years, young Willis soon found there was much yet to be learned about the world. Despite the fact he had already held several jobs, many a prospective employer sensed the inexperience and innocence of the lad's sheltered upbringing, and he soon found himself on the losing end of many an unfavorable deal. In one case, Willis was to have received fifteen dollars for a full month's work on a combination prune and chicken farm; but when payday arrived, his employer gave him only seven dollars and a book on raising chickens to cover the balance. Willis also worked for a while in a factory making wooden crates, but soon found his hands were too small to handle the strips of lumber that were rapidly being fed to him. Thus he went from one unsuccessful and unsatisfying job to the next, and in the lean days in between he would send an occasional card or note home hinting for money — his budding artistic talent engaged in such subtle reminders as a hand-drawn postcard featuring a young man looking forlornly into a cafe window.

Determined to make a fresh start, Willis headed up into the wilderness area of southern Oregon to engage in some fur trapping. There he made friends among the Modoc Indians who inhabited the area, and one in particular who accompanied him all one winter. At the time, Willis was subsisting on a meager diet comprised largely of oatmeal, and the Indian, who loved the mushy cereal, would clean his furs just to get it. After trapping for the entire winter, Willis entrusted his pelts to some fellow woodsmen to take into town for him. It was the last he ever saw of them.

Willis' experiences in the wilds and his familiarity with the trails made him an ideal candidate to act as guide and hostler for a number of camping groups. Among the parties he escorted was a group of scientists from the University of Southern California who wanted to go to the Crater Lake area to search for fossils and other traces of prehistoric life. At the time, there were no trails to the lake, but Willis' association with the Modoc Indians had acquainted him with the region; for it was there, in the lava beds, that the Modocs had once hidden from hostile whites. Conversations with the scientists about the distant past, coupled with the discovery of the fossilized remains of a sabre-toothed tiger, provided Willis with new subjects to pique his imagination. Willis enjoyed these days.



O'Brien's prehistoric hero strikes an exultant pose over the senseless missing link.



The Dinosaur and the Missing Link — which took two months to complete — was purchased by the Edison Company in 1917 and O'Brien was hired on to produce a series of similar animated shorts. Edison's studio in the Bronx contained office and workshop facilities, as well as glassed-in stages to admit natural sunlight.

The work was invigorating, but not overly strenuous; and he had ample time to himself, much of which he spent drawing horses on the canvas of the chuck wagon.

But such appointments were few and far between, and more often than not Willis found himself bartending or working at some other menial job. During one such period of employment, he was provided sleeping quarters in the back of a restaurant and bar. One night, the cook — a chronic over-imbiber — went berserk and barged into the room with a meat cleaver, shouting that he was going to cut Willis' throat. Willis quickly rolled out and under the bed to avoid the onslaught, barely managing to hold his assailant off until help arrived. Willis, in fact, was to have more than his share of problems with alcoholics. On another occasion, he found himself falsely accused of murdering an old drunk. Responding at once, William O'Brien traveled north to be at Willis' side, personally preparing his son's defense and securing for him a prompt acquittal.

Willis was seventeen when he returned home. No major catastrophe brought about the action, and he did so without feeling of compromise. The decision had merely come to him; and with the same determination that four years earlier had drawn him away, he made his way back to Oakland to resume his rightful place in the family. Once settled in, he obtained employment as an office boy in an architect's firm, and in less than a year had advanced himself to a draftsman. Shortly thereafter, he left the architect to join the staff of the *San Francisco Daily News* as a sports cartoonist. His speciality was boxing — a sport he had come to follow closely — and since he enjoyed the work, his style improved rapidly as he applied himself.

It was while working for the newspaper, however, that Willis lost another foothold on his sense of family unity. Returning home late one afternoon, he found his father waiting at the door to reprimand him for having been out drinking beer — Willis' mother had died quietly and unexpectedly in her sleep during his absence. Willis was both grief-stricken at the loss and resentful of the implications of his father's reproach. The stinging words had been spoken in haste and under emotional stress, but they exacted a heavy toll nonetheless.

After an unsuccessful attempt to starve himself down to an acceptable weight for a jockey, Willis decided to take up professional boxing. He lined the walls of his room with inspirational pictures and began working out vigorously. His hands were small, but his experience with horses had developed strong wrists. Though his interest in boxing had been long-standing, Willis had never been much of a fighter himself. Indeed, he could recall being picked on by a bully at school one day and not even fighting back until the teacher, a dignified old lady with a pince-nez, came out on the schoolroom porch and yelled; "Hit him, Willis! Hit him!" But "Shamus" O'Brien, as his friends dubbed him, was soon to leave this particular tradition behind. In fact, he won his first nine local bouts with such ease that he was promptly scheduled to fight a main Fourth of July event in a small town up north with the redoubtable Kid Morrissey of Oakland. But Willis was to discover the less glamorous side of boxing that day, lasting only two rounds with the Kid before coming to the painful realization that his destiny lay elsewhere.

Thinking the railroad business might be a promising career for his restless son, Willis' father encouraged him to take a job with the *Southern Pacific Railroad*. Willis signed on as a freight train brakeman, and later became a surveyor for the line in its expansion to the north. Still dissatisfied, however, Willis again returned south and found employment with a San Francisco decorator

specializing in marble work. He advanced rapidly in the design firm, and at the same time worked as assistant to the head architect for the 1913 San Francisco World's Fair.



O'Brien at work on a miniature elephant in his Edison workshop.



The elephant was to appear in several of his early films, including Morpheus Mike, in which it pilfered an ostrich egg to feed a hungry caveman. Unlike O'Brien's other films in this period, Morpheus Mike featured rough cartoon-style line drawings for backgrounds.



A caveman farmer with his domesticated brontosaurus and dinornis in Prehistoric Poultry. O'Brien's generally austere settings were occasionally enhanced with nicely rendered background paintings.



In flight, the dinornis was mounted rigidly, with background settings — presumably still photographs — animated to move past behind it.

It was at the shop of the designer that Willis O'Brien fabricated the clay prizefighter which gave him the inspiration for stop-motion animation.

Determined to follow through on his idea, O'Brien engaged the assistance of a newsreel photographer and set out to shoot a brief one-minute test film atop the Bank of Italy building in downtown San Francisco. First he fashioned a miniature dinosaur and a caveman from modeling clay shaped over crude wooden skeletons and then placed the figures in a makeshift setting fabricated from small bits of rock. His prehistoric diorama thus prepared, Willis set up the camera and exposed a single frame of film. Then he moved the dinosaur and the caveman slightly and exposed another frame. The movement of each arm, leg or head was sometimes no more than an eighth of an inch at a time, and it proved to be slow tedious work, especially since the malleable miniatures had to be remodeled after nearly every move. The results were somewhat jerky, but the unique illusion of movement served to interest a local exhibitor, Herman Wobber, who saw the reel in the summer of 1915. Wobber, a ten-year veteran of the Alaskan gold rush days and a former partner in a printing and stationery firm, had gotten his start in the infant film business in 1906, opening the first nickelodeon in downtown San Francisco after the great earthquake and fire had devastated much of the city.

Wobber advanced O'Brien \$5000 to produce *The Dinosaur and the Missing Link*, a lengthier and more polished realization of his stop-motion process. O'Brien's original scenario for the film proved to be a motley collection of semi-humorous episodes in the worst tradition of early animated cartooning. The hero of the tale, Theophilus Ivoryhead, arrives at the cave dwelling of Araminta Rockface only to find two other suitors — the Duke and his bitter rival, Stonejaw Steve — fighting outside for her attentions. Showing no favoritism, the winsome cavegirl invites all three into her home, eventually sending them off in search of succulent delicacies to grace her dinner table. While Theophilus fishes calmly in a nearby pond, the Duke and Stonejaw engage in a



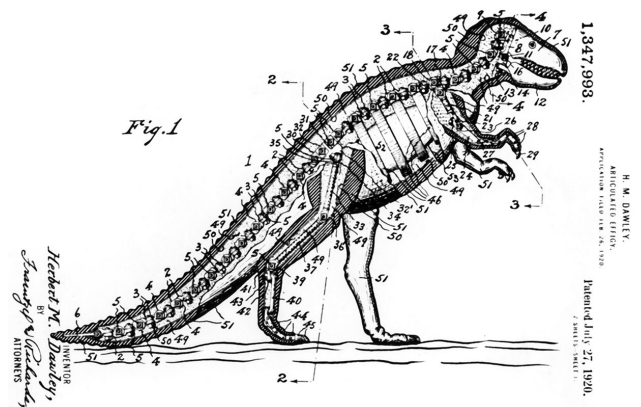
A jealous mailman makes a ponderous delivery in R.F.D. 10,000 B.C.



After a fearsome battle with a rival suitor, the upper half of the vanquished mailman dangles limply from a tree, waiting for its disembodied legs to catch up.

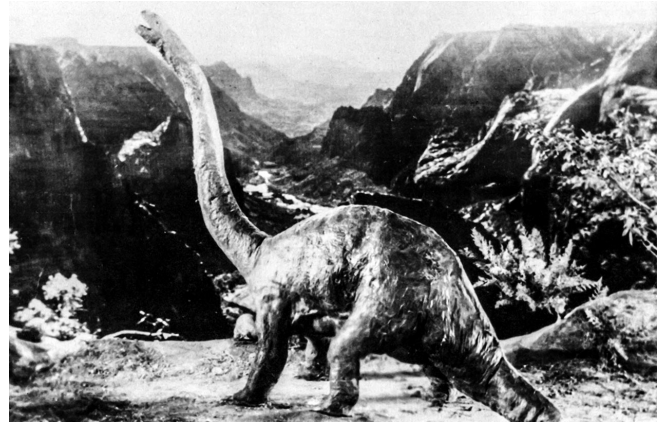
fearsome display of bow-and-arrow hunting prowess — missing by a wide margin the prehistoric bird they are stalking, but managing somehow to strike Araminta's father in the rear. Meanwhile, Wild Willie, the hairy missing link who has been terrorizing the countryside, stops at the local watering hole where his unwise provocation of a thirsty brontosaurus sparks a brief skirmish that ends with the apeman being tossed unconscious to the ground. The ponderous saurian plods off just as Theophilus arrives to investigate. Seeing Araminta and her two other suitors approaching, Theophilus places his foot on Wild Willie's battered form and assumes the role of conqueror. Unable to resist such apparent bravery, the prehistoric maiden rushes to his side.

Abandoning his rooftop retreat, Willis O'Brien began production of *The Dinosaur and the Missing Link* in the darkened recesses of the old Imperial Theatre on Market Street. One of the earliest of the San Francisco movie palaces, the Imperial had been built in 1910 by Sid Grauman, but was subsequently taken over by Herman Wobber who set aside a portion of its secluded basement area as a workshop and studio for his budding stop-motion animator. Clearly, O'Brien's ground-breaking test had served its purpose; but it was apparent right from the start that major refinements in methodology would be required. As before, all characters would be articulated miniatures. However, in contrast with his earlier attempts in wood and clay, Willis' second-generation performers were constructed over metal-jointed skeletons and then covered with thin pieces of sheet rubber to help retain their shape. Much more detail was incorporated into the miniature settings, which were still comprised largely of rocks and bits of natural vegetation — but carefully selected and arranged, and augmented with tiny props and an occasional background painting to impart a sense of depth. All together, O'Brien spent two months working on the five-minute melodrama. Then, once it was completed, Herman Wobber set about finding a distributor for the unique novelty film.



Once *The Ghost of Slumber Mountain* was completed and the two had parted ways, Herbert M. Dawley — O'Brien's producer on the very successful film — obtained a patent for construction of the stop-motion puppets and then later tried to bring suit against the makers of *The Lost World* when it became public that animated dinosaurs were to be used in the film.

More than a year passed before *The Dinosaur and the Missing Link* was introduced to the Edison Company. At that time, Edison was contemplating a new concept in family programming consisting of a package rental of five reels of film. Two of these reels were to be an adventure or drama, while the remaining three were to consist of a cartoon or comedy, an educational film, and a scientific or travel film. These weekly packages were to be called Conquest Programs. Edison was impressed with O'Brien's film magic and bought *The Dinosaur and the Missing Link* for the first Conquest Program, which was released early in 1917. More importantly, they offered him a position at their New York studios making a series of ten such animated shorts.



A brontosaurus miniature poised atop Sir Arthur Conan Doyle's prehistoric plateau, with photo backdrop in the rear.

The Edison facilities, among the earliest of the modern glass-roofed studios, were located at 2826 Decatur Street in the Bronx. O'Brien, as he soon came to be known around the studio, set up shop late in 1916 and began work on his first films for the Conquest Program. Each ranged from about two to five hundred feet in length, and O'Brien was paid one dollar per finished foot. For this, he designed and built the miniature models and sets, designed the costumes, and did all his own lighting and camera work.

O'Brien had already completed two shorter films, *Morpheus Mike* and *The Birth of a Flivver*, while waiting for Wobber to find a distributor for *The Dinosaur and the Missing Link*. *Morpheus Mike* was a partial departure in format, beginning as it did in contemporary times with a young housewife hanging out her laundry. Mike, a poor itinerant, rescues the clothing from a hungry goat and is rewarded with a plate of food — which a passing dog manages to steal away from him. Daydreaming, Mike fancies himself a diner at a Stone Age cafe where his every wish is catered to by an obliging prehistoric elephant that provides him with a serving of tiger stew, an ostrich egg that hatches before his eyes, and a trunk-full of snake soup. At this point, Mike is abruptly aroused from his reverie when his benefactress inadvertently douses him with a jug of water she is dumping out her window. In addition to format, O'Brien's second film also differed from his first in that, aside from the immediate set pieces and props used by his characters, all backgrounds were cartoon-style line drawings. In his third outing, *The Birth of a Flivver*, two enterprising cavemen invent the wheel; but their attempts to hitch a cart they then construct to an uncooperative dinosaur result in disaster, and the two dismiss the wheel as a useless device.

O'Brien's first in-house production for Edison was *R.F.D. 10,000 B.C.*, which was released as part of the third Conquest Program. It involved a brontosaurus-powered mail cart and an ill-fated attempt by its jealous driver to discredit the favored suitor of a prehistoric maiden by substituting his carved-in-stone valentine with one proclaiming her an ugly old maid. When the maligned rival discovers the plot, however, the feckless mailman is torn quite literally limb from limb — his upper torso landing in a nearby tree and his disembodied legs running after it. For a follow-on subject, *Prehistoric Poultry*, O'Brien constructed an ostrich-like dinornis, which not only was made to fly —

somewhat implausibly, given the stubbornness of its wings — but which also had a small inflatable breathing mechanism and a hollow tubular neck so that rocks it seemed to be swallowing could be made to work their way down. When an overzealous hunter accidentally hits the local farmer with a catapulted boulder the injured farmer blames it on his pesky dinornis and reacts in kind. The long-legged creature, though generally mild-mannered and affectionate, tends to get ornery when aroused. Seeking out the offending huntsman, it pushes him onto his own catapult and then sends him tumbling through the air.

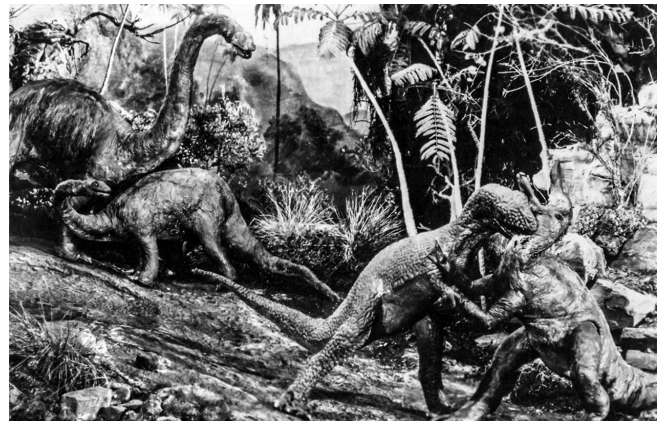
OBie continued in the prehistoric vein with such films as *Curious Pets of Our Ancestors*; but for some of his other stories, he used only miniature people and present-day animals. One of these was a two-reel melodrama, *In the Villain's Power*, which utilized eight human figures — about a foot tall each, and with all the joints and moving parts of their living counterparts. Each completed hand, less than an inch long, required nineteen separate castings — and cost an extravagant \$16.50. OBie worked also on *The Puzzling Billboard* for a proposed series called *Sam Loyd's Famous Puzzles* — and on another series as well, called *Mickey's Naughty Nightmares*, which incorporated footage of a live boy along with the animation. Attesting to the ongoing popularity of his work, *The Dinosaur and the Missing Link* was reissued by itself (as *The Dinosaur and the Baboon*) only three months after its initial public exposure in the first Conquest Program.

Unfortunately, however, Willis O'Brien had arrived at the Edison Studios during a period of financial and political crisis brought about through intensified attempts by independent film companies to legislate the monopolistic Motion Picture Patents Company, of which Edison was the keystone member, out of existence. The roots of the conflict dated back to 1907 and a landmark court decision upholding the exclusivity of Thomas A. Edison's long-contested patent rights to the motion picture camera — a decision which served to threaten the existence of numerous other film companies which had sprung into existence in the meantime. In order to avoid claims of patent infringement, nine of the more established companies agreed to pay licensing fees to the inventor, joining forces with Edison to form the Motion Picture Patents Company. From 1909 to 1914, the Edison conglomerate held a virtual stranglehold on the fledgling film industry. Exchanges were established which dealt only with films made by member companies. Projection machines were licensed, and the projection of films not produced by members was prohibited. It was a near-perfect, sealed operation from studio to exchange to theater. Nevertheless, nonaffiliated companies persisted in their defiance of the Patents Company, subjecting themselves to relentless and heated courtroom confrontations which more than occasionally spilled over into overt hostilities. The mysterious disappearance of cameras and other vital equipment from independent studios was not uncommon, and accidents of suspicious origin often resulted in the wholesale loss of valuable film negative. Principally for this reason, the New York-based motion picture industry began to fragment, shifting westward to the small Los Angeles suburb of Hollywood where independent filmmakers hoped to escape the choking influence of the Edison forces. Finally, in April 1917, after years of complex litigation, the Supreme Court acted to dissolve the monopoly. One by one, the once-omnipotent members of the Patents Company, who could not compete on an open market with the more progressive and resourceful independents, began going out of business. Almost immediately, the effects were noticeable at Edison. In the rush to produce superior feature-length films — long

resisted by the Patents Company — the Conquest Program was summarily abandoned and several of OBie's animated novelties were shelved, never to be released.

Reluctant to dispense with his talents altogether, however, Edison put O'Brien to work on a proposed series of educational featurettes on prehistoric animals. Since his previous representations of ancient lifeforms had been based largely on popular conception rather than scientific authority, O'Brien spent a good deal of research time at the American Museum of Natural History, closely examining fossilized remains of the great beasts and consulting with the museum's eminent paleontologist, Dr. Barnum Brown. Even as OBie proceeded, though, it was becoming increasingly apparent that the studio's days were numbered, and ultimately the educational series was quietly put to rest. With nothing left to keep him there, OBie departed Edison late in 1917, only a few months before the beleaguered management finally capitulated and sold their studios and new Jersey processing plant to a small film company in Massachusetts.

Early in 1918, O'Brien was contacted by Herbert M. Dawley, a former Army major and sculptor from New Jersey, who had become intrigued with the prospect of producing prehistoric pictures of his own. Dawley's experiments at the time had been limited primarily to the construction of a few articulated dinosaurs which he had photographed as still subjects. The Dawley models were considerably larger than O'Brien's — one tyrannosaurus was reportedly seventeen feet tall — and considerably more crude. Their basis was a wooden skeleton, fleshed out with modeling clay and covered with a skin of cloth painted brown.



*A pair of brontosauri watch anxiously as a ferocious allosaurus mauls a trachodon. In all, some fifty prehistoric animals were constructed for *The Lost World* by Marcel Delgado, who fashioned his creatures over articulated armatures designed by O'Brien. Settings were built by Ralph Hammeras and his miniatures crew.*



A pair of trachodons demonstrates that detailing varied notably from puppet to puppet. Considering the number of dinosaurs he had to construct, it is reasonable to assume that Delgado spent most of his detailing time on whatever puppets would be most prominently featured.

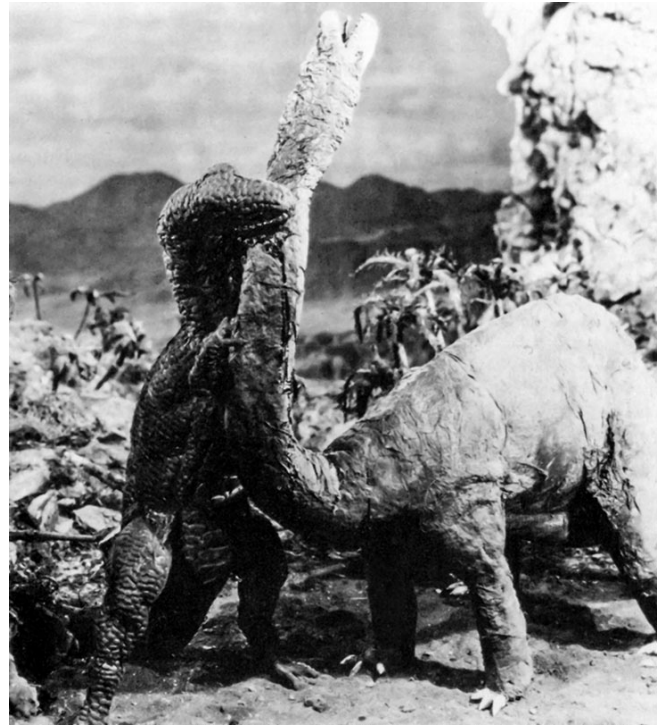


A family of triceratops.

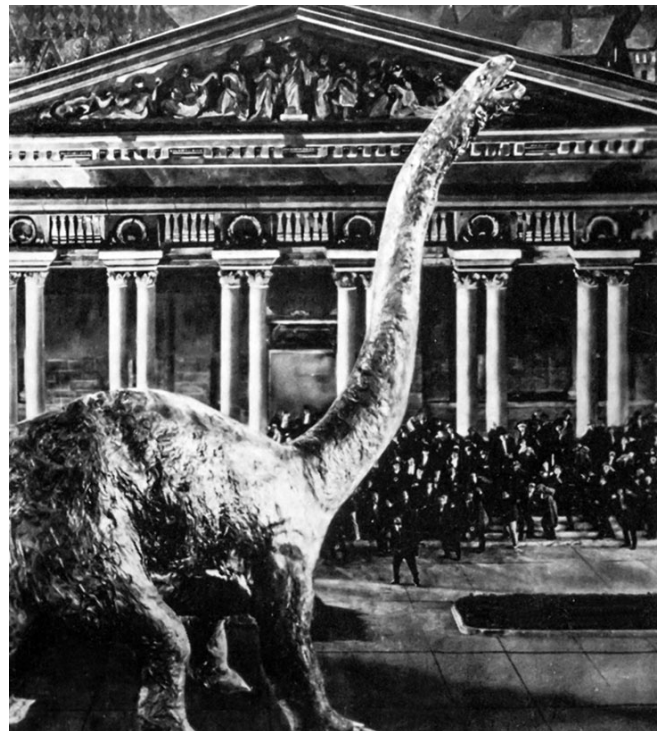
Dawley proposed that they work on a film together. OBie jumped at the chance, leaving almost immediately for New York where he was provided with a twenty-dollar gold piece each day until Dawley was ready to begin the project. Unaccustomed to such a monetary windfall, OBie could think of nothing more exciting to do than ride a double-decker sightseeing bus around the city all day. Finally he was given three months and a budget of \$3000 to make a film based on his own original story, *The Ghost of Slumber Mountain* — so called because it concerned a dream adventure. In it, a member of a mountain climbing party falls asleep and dreams that he meets the bearded ghost of an old hermit who once lived on the mountain. The ghost reveals a mystic telescope which shows life as it was millions of years ago. O'Brien animated several prehistoric reptiles and birds for this brief sequence. A brontosaurus was made to amble across a set consisting of miniatures and a painted backdrop, as was a diatryma, a large flightless prehistoric bird which snatched a squirming snake up in its beak. The animated segment climaxed with a fight to the death between a tyrannosaurus and a triceratops. The prehistoric models were constructed in basically the same way as those in his Edison pictures, but were considerably more detailed and realistic in appearance, reflecting his subsequent museum research into paleontology. The two-reel film was OBie's most ambitious project to date, and his proficiency in the animation process had increased considerably over his earlier efforts.

The Ghost of Slumber Mountain, distributed by World Film Corporation, was a tremendous boxoffice success, running on Broadway for a considerable length of time and grossing over \$100,000 for its meager investment.

During the year following completion of this first short film, Willis O'Brien had begun dating Hazel Ruth Collette, a young Oakland woman twelve years his junior. Before long, the two were engaged to be married — an impetuous resolve the future bridegroom found cause to regret almost from the start. Still giddy with excitement over the



A fight to the death between an allosaurus and a brontosaurus.



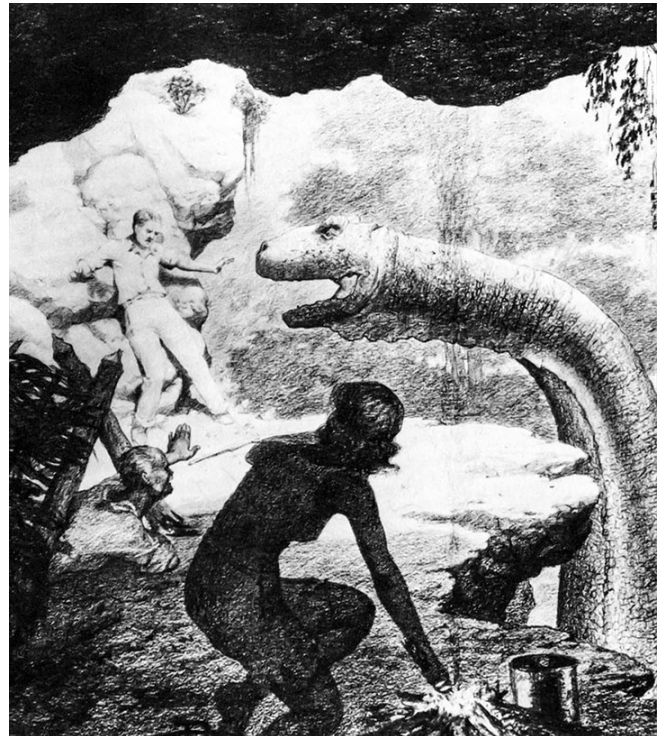
For the film's finale, a brontosaurus is captured and transported back to London where it escapes and wanders clumsily about the bewildering city streets.

prospects of his new work, Willis felt himself not at all ready for the responsibilities of marriage, but once committed could find no diplomatic way of breaking it off.

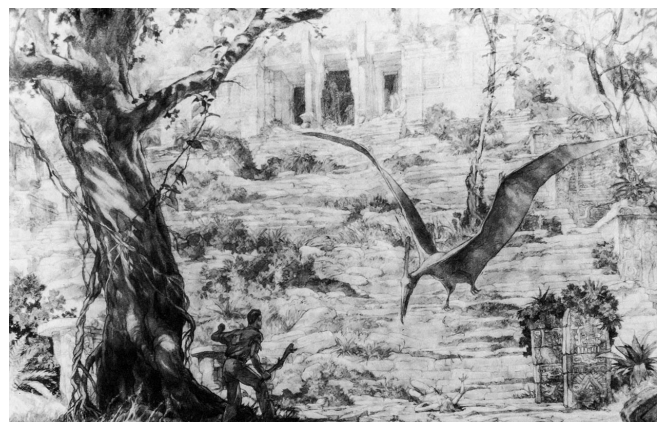
The offered position at the Edison Studios had presented not only the opportunity to do the work of his choice, but it also necessitated his moving to New York. So rather than face up to an awkward situation, Willis simply left Oakland, hoping his absence from Hazel would dissolve the engagement. When it became apparent, however, that OBie had no definite plans for returning to the West Coast, an overly solicitous aunt who feared for her niece's reputation brought Hazel to New York. OBie thus found himself in an even poorer position for backing out. Finally, leaving Edison without further prospect of immediate employment in New York, OBie saw only one alternative left open to him. He returned home with Hazel and married her in Oakland.

In 1919, Hazel O'Brien gave birth to their first child — a son named William, after OBie's father. The following year Willis Jr. was born. OBie loved his sons, but their entrance into his life did not settle the uneasiness within him. He realized that he had been coerced into making a hasty decision about marriage and he resented it. He and Hazel quarreled regularly, and the wounds did not heal with time.

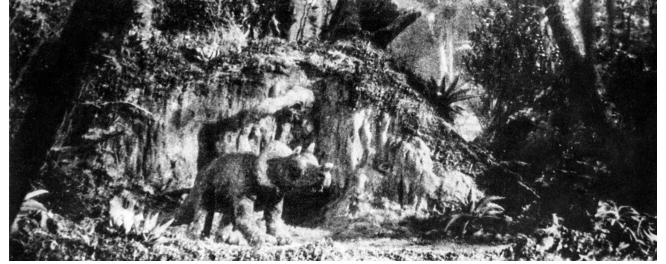
On the evening of June 2, 1922, after Harry Houdini had performed his famous trunk escape and various other illusionists and conjurers had performed their wonders, Sir Arthur Conan Doyle, on a tour to promote spiritualism in the United States, spoke before the Society of American Magicians at the Hotel McAlpin in New York. He concluded his talk with a vague and mysterious introduction to a film he had brought along to show his hosts. Doyle, who had previously presented some purportedly genuine photographs of elves and other ectoplasmic manifestations, then exhibited, without titles or comment, a brief film depicting dinosaurs in action. Spellbound, the assembled magicians watched as a family of browsing prehistoric herbivores fell prey to a pair of hungry tyrannosaurs. Then, rather than share in the spoils, the two great predators engaged each other in a bitter death-struggle — the victor, in turn, attempting without avail to challenge a passing stegosaurus and then being driven away itself by an impregnable triceratops. Basking in the moment, Doyle seemed to intimate that the film was authentic, but refused to offer any further



Preproduction art by Byron Crabbe and Mario Larrinaga for the unrealized Creation project. A malignant brontosaurus attacks the castaways in their cliffside hideaway. Elaine Armitage, the heroine, drives it away by thrusting a blazing firebrand into its gaping mouth.



1911 was a crippling blow to the struggling immigrants. Marcel, already accustomed to having his education interrupted whenever the need arose to help support the family, was forced to withdraw permanently from school and seek full-time employment. He had always loved to draw and build things, and in the lean years to come he nurtured dreams of a career in art, devoting much of his limited leisure time to developing his self-taught skills. After the first World War, though, an opportunity arose for him to receive formal training at the Otis Art Institute. Unable to afford the required fees on his \$18-a-week grocery clerk's job, his talent was nevertheless already well-enough developed that he was allowed to work off his tuition by serving as class monitor, handling administrative matters and offering constructive criticism to the other students. It was in this capacity that he came to meet Willis O'Brien who had also enrolled at the school.



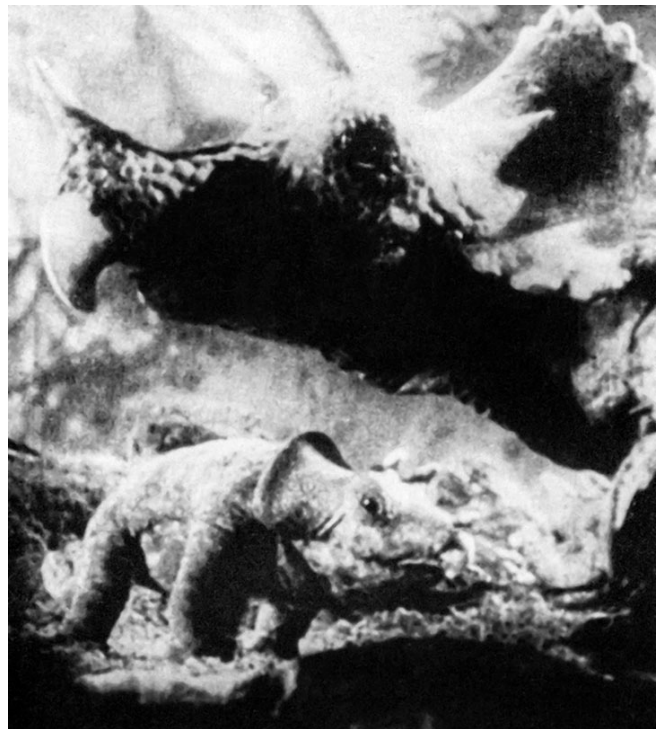
In the reel of animation test footage shot for Creation, the baby triceratops wanders off from its mother to engage in a bit of exploring. Exquisitely rendered miniature settings, enhanced with moody background and foreground paintings, were much more atmospheric than those in The Lost World



Hallet shoots the baby triceratops in a well-executed Dunning traveling matte shot.



A rudimentary form of O'Brien's miniature rear projection system was employed in scenes of Hallet running from the mother triceratops. The lumbering beast was animated in place, with a tracking shot of the actor rear-projected behind it.



The mother triceratops and her two offspring.

OBie approached Delgado with an offer to work for him on *The Lost World*, but Delgado turned him down. The \$75-a-week salary was more than tempting, but he wished to continue on with his art career. OBie then asked if he would like to visit the studio. This did interest the young artist and the next day he received a personally guided tour of the First National lot. Finally, OBie took him into a well-equipped studio workshop, filled with dinosaur sketches and various models, and told him it was his for the taking. Delgado began work that same day.

With the major components of the technical crew selected, there began two years of preliminary work on *The Lost World*. Hundreds of ideas were developed and many tests were made; and all the while the operation was kept in strictest secrecy.

Preproduction activities were carried out on sealed stages and not even the regular technicians at First National were aware of what was going on behind the locked doors. The film shown by Sir Arthur Conan Doyle at the magician's convocation was the result of these two years of experimentation.

On the day after the magician's banquet, Harry Houdini, president of the Society of American Magicians, received the following note from Sir Arthur:

My dear Houdini:

My cinema interlude upon the occasion of the magician's dinner should, I think, be explained, now that its purpose was fulfilled. The purpose was, simply, to provide a little mystification to those who have so often and so successfully mystified others.

In presenting my moving dinosaurs I had to walk warily in my speech, so as to preserve the glamour and yet say nothing which I could not justify as literally true. But I was emphatic that it was not occult and only psychic, in so far as things human come from a man's spirit.

It was preternatural in the sense that it was not nature as we know it. All my other utterances were, as I think you will agree, within the actual facts.

The dinosaurs and other monsters have been constructed by pure cinema, but of the highest kind, and are being used for *The Lost World* picture which represents prehistoric life upon a South American plateau. Having such material at hand and being allowed by the courtesy of Watterson Rothacker to use it, I could not resist the temptation to surprise your associates and guests. I am sure they will forgive me if for a few short hours I had them guessing.

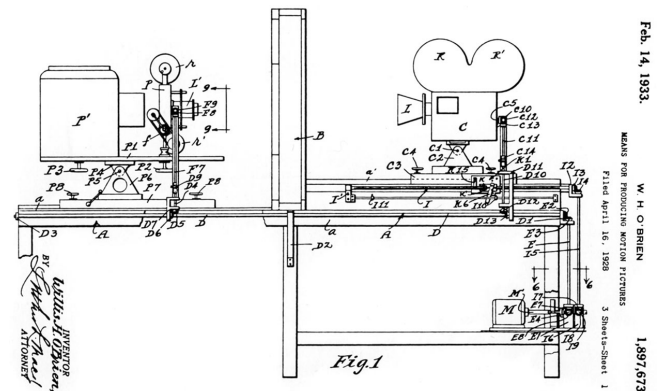


An arsinoitherium was to have knocked the Chilean sailors from a log into a gorge. Many of the situations and some of the already completed miniatures from Creation were either adopted and adapted for later use in King Kong.

And now, Mr. Chairman, confidence begets confidence and I want to know how you got out of that trunk.

Yours sincerely,
Arthur Conan Doyle

Sir Arthur's inspired hoax had garnered front-page coverage in the previous day's *New York Times*: "Prehistoric brutes that resembled rhinoceroses magnified many times, equipped with enormous horns that pointed forward like those of the unicorn, drove dinosaurs away from feasts on one another. One monster, like a horned toad of monumental proportions, presented an impenetrable surface of armor plate to attacking reptiles and moved along in safety." Later, in the same article, was a further assessment of Doyle's prehistoric manifestations: "His monsters of the ancient world or of the new world which he has discovered in the ether, were extraordinarily lifelike. If fakes, they were masterpieces." In light of the next day's revelation, however, the *Times* editorial staff — no doubt embarrassed by their initial gullability — filed a somewhat revised judgment: "While the detail of the monsters was shown in pictures exhibited to the magicians, the background was conspicuous for its meagerness. It was barren for the most part, with a vague unidentifiable tree here and there, apparently indicating an unwillingness of the scenic artist to commit himself to the details of vegetation in the age of reptiles."



The O'Brien miniature rear projection system at its simplest — a stop-motion projector and camera positioned on either side of a central assembly consisting of a rear process screen and an intermediate pane of glass between it and the camera. Small areas of live-action footage could be projected onto the screen and then surrounded with elaborate glass paintings. In *King Kong*, two or more projectors were sometimes used — along with miniature animation sets and as many as three separate levels of foreground and background paintings.

But it was not only the illusionists and the press who took notice of this first publicity about *The Lost World*. Herbert M. Dawley announced the following day his plans to take legal action against Watterson Rothacker for infringement of patent rights. Further, he declared his intent to bring suit against the filmmakers for \$ 100,000 in damages and to obtain an injunction preventing the completion and distribution of *The Lost World*.

Herbert M. Dawley and Willis O'Brien had parted ways after *The Ghost of Slumber Mountain*, and while O'Brien was aware that Dawley had subsequently tried to belittle his contributions to their very successful co-venture, he was not aware that his former associate had unilaterally applied for, and obtained, patents for construction of the articulated models essential to the stop-motion process.

O'Brien, who had developed the basic mechanisms years before, had declined at the time to submit his own application because he feared the Patent Office's insistence on publishing full technical specifications would merely serve to unleash his secrets on an industry already embroiled in bloody patent disputes.

Citing *The Ghost of Slumber Mountain*, which — to no great surprise, in retrospect — had been released without an O'Brien screen credit, and a follow-on film, *Along the Moonbeam Trail* (generally thought to have been pieced together from outtakes of the earlier production), Dawley told reporters: "An employee of mine who learned the process by working in my office has been claiming, as employees sometimes do, that he did all the work and that the idea belongs to him and this sort of thing. I have received no notice whatever, before reading about it today, that it was contemplated to use my work in this fashion, and I shall certainly consult my lawyer at once and seek an injunction against the production of *The Lost World*."

Preproduction was temporarily halted while OBie and Rothacker went about gathering notarized statements from the now-scattered employees of the former Edison organization attesting to the fact that O'Brien had been working at stop-motion animation with metal-jointed puppets long before he had met Dawley. Presented with this evidence, Dawley was persuaded to settle out of court.

Finally, in 1923, principal photography began on *The Lost World*. Some fifty scale-model dinosaurs represented more than a year and a half of dogged experimentation and development by Marcel Delgado. OBie had designed the steel skeleton armatures which were then tooled by studio machinists; but the actual job of creating the models was left to Delgado who based his creatures on the definitive paintings of Charles R. Knight at the American Museum of Natural History in New York. The steel-skeletoned animals were stuffed with red bath sponge and the skin was fabricated from thin sheets of rubber dental dam with additional detailing applied to the surface. Many of



When it appeared as though *Creation* would be scrapped on the recommendation of Merian C. Cooper, O'Brien and Byron Crabbe — realizing that Cooper had been trying to obtain financing for a live-action gorilla picture — prepared an oil painting of a giant ape which they presented to the producer with assurances that such a creature could be realistically conveyed with stop-motion animation.

Delgado's dinosaurs were equipped with breathing apparatus which consisted essentially of football bladders. With each exposed frame, the bladder could be inflated or deflated a bit to produce the illusion of breathing. After each day's filming, the creatures had to be repaired and groomed in order to be ready for the next day's work, and Delgado spent many a late night tending to his creations, some of which had to be torn down completely to tighten or repair worn parts of the steel armature.

Short-notice requirements, too, were not uncommon. At one point, during his animation of the frenzied stampede sequence, OBie decided he wanted to include a grim tableau featuring a family of allosauri devouring a fallen herbivore. The predators, fortunately, were already constructed; but he needed a partially eaten carcass. Overnight, Delgado fashioned some suitably grisly remains from scraps of wood and cotton and other odds and ends that were lying around his workshop.

Meanwhile, Ralph Hammeras and his crew were constructing the miniature sets which were built on sturdy platforms three feet off the floor in order to provide OBie with the greatest possible freedom and comfort while animating. Most were about six feet wide, but only four feet deep so that he could reach into the back of the set without disturbing the miniature vegetation in the foreground. Although most of the set dressing was artificial and rigidly emplaced, some areas calling for tall jungle grass were sown with a fine-bladed variety of seed grass that sprouted and grew to full maturity in about ten days.

When a set was completed, it was transported to the shooting stage where walls were built around it to prevent anyone from interrupting OBie's concentration since it was imperative that he remember every move his dinosaurs made. Then the necessary glass paintings — used primarily to produce cloud-filled skies and certain foreground foliage — were erected in front of the camera. Next, several banks of Cooper Hewitt lights were hung about five feet above the center of the set to provide steady illumination without flickers. After each minute articulation, O'Brien would expose a single frame of film with an electric cord which ran to the camera motor. No one was permitted to disturb him, and his solitude was broken only when he solicited the aid of some of his associates if a large number of dinosaurs had to be animated at one time, as in the climactic volcano eruption sequence which involved dozens of creatures stampeding on a specially-built 75-foot by 150-foot set.

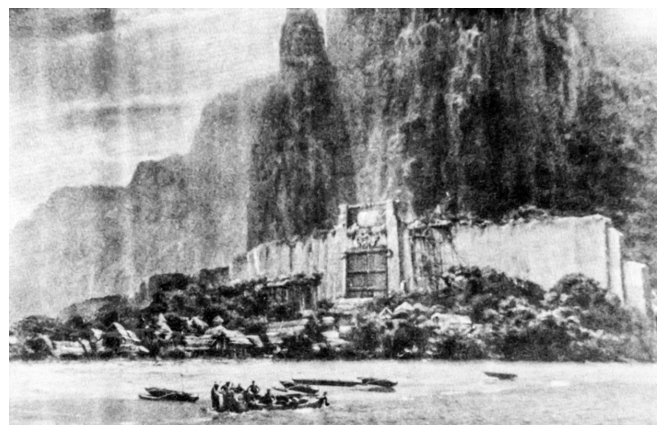
Most of the film's animation sequences were designed so that the prehistoric action was simply observed by the live-action characters who were positioned conveniently off-camera. A dozen or so connective shots, however, required actors and animated puppets to be together in the same frame. Such composites generally required at least two in-camera passes. O'Brien would first prepare a detailed sketch showing how the final scene should appear. In most cases, the human characters were safely positioned in an out-of-the-way corner while the dinosaurs occupied center stage. Arthur Edson, a distinguished veteran of numerous Douglas Fairbanks features — including the effects-laden *Thief of Bagdad* — was the main unit cinema-tographer. Working from OBie's drawings, Edson would cut an opaque matte for each scene, usually following the readily concealable line of a rock or a tree situated somewhere between the live and miniature elements. If a hard-edge matte was desired, he would then position the matte far enough away from his camera lens so the edge would be in focus; if a soft-edge matte was desired, he would position it close to the lens so the edge would be out of focus. Either way, only that portion of the scene containing the actors and

their immediate surroundings would be recorded on film. The rest of the frame would remain unexposed. The live-action negative would then be rewound and delivered undeveloped to the miniature shooting stage where O'Bie would prepare an exact countermatte designed to shield the already completed photography from further exposure while he put his model dinosaurs through their paces. For testing purposes, Edeson customarily shot a couple hundred extra feet of film at the beginning or end of each take. Thus, once O'Bie had completed his setup, he could expose a few feet of the excess footage to double-check his lighting balance and make certain the matte was a good fit. If it was not, minor variances could be made by adjusting the countermatte or by painting out the offending area on Hammeras' intermediate foreground glass. Once a satisfactory blend was achieved, O'Bie could safely proceed with his animation. Certain scenes — in the fiery stampede, and then later in London — required yet a third camera pass to add drifting smoke or fog elements which were simply superimposed over the existing latent imagery. Properly executed — as it usually was — the split-screen stationary matte technique produced a near-flawless composite of live-action and miniature photography.

On standard 35mm stock there are sixteen frames to the foot. For *The Lost World*, the film was projected at the silent rate of sixteen frames per second or sixty feet per minute. Therefore, every minute of animation which appeared in the film necessitated 960 separate movements of one or more creatures. O'Bie considered himself fortunate if a ten-hour day rewarded him with thirty-five feet of finished film — a little more than twenty seconds of viewing time.

After several months of this routine, First national decided to close out most of its production on the West Coast. The conflict over New York vs Hollywood filming had been raging ever since the dissolution of the Patents Company. New Yorkers argued that their city was best because it was the motion picture distribution hub of the world and most of the companies still had their main business offices located there. Also, New York was closest to the best source of trained actors — Broadway. Hollywood proponents, however, maintained that California sunlight was indispensable to the glass-roofed studios, and by 1919 nearly ninety percent of all film work was being done in Hollywood. However, after *World War I*, Fox and Famous Players-Lasky built lavish multimillion dollar studios in New York and equipped them entirely with carbon arc lights designed to eliminate the inherent problem of shifting shadows from the sun. Following suit, First National bought and renovated the old Biograph Studios in the Bronx, and the entire production crew of *The Lost World* was moved there to complete the film.

O'Brien, who arrived in New York a few weeks before Ralph Hammeras, could not resist the temptation to engineer a practical joke on his friend. He and some of his crew met Hammeras at Grand Central Station and put him in a taxicab whose driver they had previously instructed to take a roundabout route to the Algonquin Hotel. The cab driver tore through the streets with such utter abandon that Hammeras gave up all hope of ever reaching the hotel in one piece. When he did, however, he was met in the lobby by O'Bie and the others, who had taken a more



King Kong employed nearly every special effects technique in existence at the time. The live-action landing at Skull

direct route. Hammeras was assigned a room and his friends departed. Travel-weary from the cross-country train trip and a nervous wreck from the ride through New York, Hammeras could hardly wait to take a relaxing shower. In the midst of it, however, the phone rang and he answered it dripping wet. The voice was that of a young woman who seemed very surprised to hear him answer. She told Hammeras that the room belonged to her and her mother, and that she would be right up. Hammeras ran to the closet and found that it was indeed filled with women's apparel — then he heard a knock on the door. Frantically grabbing a towel, he draped it around himself and opened the door. There stood OBie and the boys, laughing at the predicament caused by their carefully planned and well-executed prank.

Island was complemented with a Mario Larrinaga matte painting of the native village, the great wall and the rocky precipices behind it. The set design was a masterpiece of the art of the day, and the live-action footage could then be matted onto the miniature wall.

After some fourteen months of technical production, *The Lost World* was finally completed and prepared for general release. The landmark film epic depicted the singular adventures of Professor Challenger (Wallace Beery) who becomes convinced that prehistoric life still exists on a towering plateau deep within the Amazon rain forests. Paula White (Bessie Love), daughter of his friend and colleague, Maple White, has returned to London from that region with detailed accounts of such creatures from her father's journal and the sad news that Maple White has disappeared altogether in a further attempt to elaborate upon his findings. Challenger resolves to lead an expedition into the jungle to verify his friend's discoveries — and, if he is still alive, rescue him. At a stormy scientific meeting, the irascible professor is openly ridiculed for his views; but fortunately, Edward Malone (Lloyd Hughes), a young reporter representing a London newspaper Challenger is suing for libel, has managed admittance to the forbidden assemblage with the help of his friend, Sir John Roxton (Lewis Milestone). Intrigued, Malone persuades his publisher to underwrite the costly expedition, and the professor reluctantly accepts the offer. Challenger, Malone, Roxton, Paula White and Professor Summerlee (Arthur Hoyt) arrive at the plateau and set up camp below. A pterodactyl seen gliding over the distant summit affirms their conviction that Maple White was correct. All the more determined, the party makes its way to the top of an adjacent pinnacle where a sturdy tree is felled, forming a natural bridge to the otherwise inaccessible plateau. Crossing over, the rescuers find themselves amidst a spellbinding array of prehistoric creatures living and fighting as they did millions of years ago. Before their eyes, a hungry allosaurus assaults and kills the duck-billed vegetarian, trachodon — then tries likewise to attack a baby triceratops, but is repulsed by its protective mother. The allosaurus is later dispatched by another triceratops; and the triceratops, in turn, is killed by a tyrannosaurus rex. Unhappily, the explorers also discover the skeletal remains of Maple White. Later, as they plan to descend to their base camp, a brontosaurus topples their tree bridge, obliterating their escape route. A system of caves leads them to an opening in the plateau wall. From there they signal the camp below and a small monkey which has become attached to Paula scrambles up the sheer cliffside with a rope ladder. An erupting volcano transforms *the Lost World* into a raging inferno. The dinosaurs stampede in panic, but the explorers manage to descend the rope ladder safely — despite last-minute interference from a hostile apeman (Bull Montana). As the party prepares for the return home, they discover a brontosaurus which has fallen from the plateau into a marshy mudhole. Rescuing the beast, they transport it back to London where it

proceeds to break free on the docks, stumbling destructively around the unfamiliar city before plunging into the Thames and swimming out to sea.



A portion of one of the King Kong animation sets, featuring foreground miniatures and background paintings. The flat pathway leading left from the fallen tree trunk is drilled with holes through which tie-down rods for the puppets could be fed up from below.



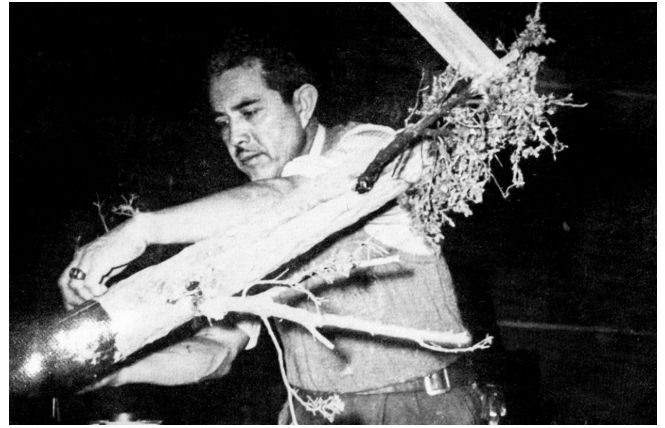
The stegosaurus spots the rescue party.

The Lost World was the first film to combine live and animated action in a realistic manner. Like most of its successors, it was no pinnacle of plot structure; and the formidable cast of seasoned veterans was rather listlessly handled by director Harry O. Hoyt. But due to the limited exposure of O'Brien's earlier work, stop-motion animation was an entirely new experience for most moviegoers and the visual splendor of his prehistoric beasts was more than enough to counterbalance whatever faults the feature as a whole may have had. The film was released to great critical acclaim early in 1925, and quickly surfaced as the smash hit of the year. In addition to its other honors, *The Lost World* was selected by the German Air Service Company to be the first inflight motion picture — on February 4, 1926, Willis O'Brien's technical feats delighted a plane-full of German dignitaries over Berlin in an experiment to determine the feasibility of entertaining passengers while in flight.

After completion of *The Lost World*, Marcel Delgado's miniature dinosaurs were donated to the Museum of Arts and Sciences at Exposition Park in Los Angeles, where they were exhibited for many years until the rubber began to sulfurize and disintegrate. They were then stored away and, years later, when a new wing was added to the museum, the remains of the creatures were accidentally sealed between walls.

Regrettably, Willis O'Brien's occupational success did little to boost the success of his marriage. Despite the births of their two sons, whom OBie loved dearly, the chasm between husband and wife continued to broaden. As OBie grew to seek more and more freedom, Hazel responded by becoming more and more tenacious. A \$10,000 bonus given to him by Watterson Rothacker, combined with the heady publicity he had garnered from his success on *The Lost World*, drove OBie to rebel. While not working he drank heavily, spent his time and money at the racetrack, and eventually began seeking the companionship of other women. As his evenings away from home became more and more frequent, the alibis he invented to cover his whereabouts eventually led to the attempted character assassination of one of his friends.

When OBie went to Boston with the New York Follies troupe for the premiere of *The Lost World*, Hazel remained behind in New York. Thinking she was probably lonely, Ralph Hammeras offered to take her to dinner and then to a musical. Hazel accepted his invitation — but they were never to get to the show. When their meals arrived, she simply sat across the table from Hammeras and stared



Marcel Delgado works on one of the miniature trees.

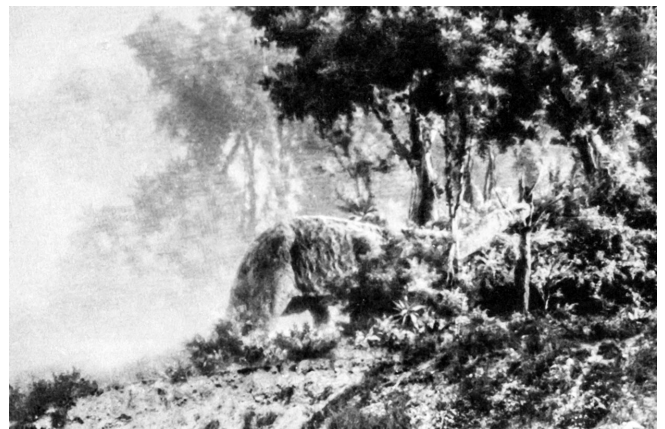


Denham and Driscoll walk past the fallen stegosaurus. Actors were positioned on a treadmill in front of a rear process screen, with the traveling motion desired for the shot incorporated into the animated background plate. A microphone dips into the frame from above.

at him. Then, suddenly, she blurted out that he was responsible for ruining her life. Dumfounded, Hammeras urged her to explain. Angrily, she told him that until he and her husband had met, OBie had never failed to return home at night. Still Hammeras did not understand — but from the ensuing conversation he surmised that OBie had unwittingly involved him when he was seeing other women by telling his wife that the two of them were out together at the fights or at business parties. Realizing that OBie had never intended to cause him any embarrassment, Hammeras chose not to deny the charges — nor did he bother to mention the incident to OBie when he returned from Boston.

But about two weeks later, Hammeras received a letter from his very worried father indicating that he had received a letter from a young woman in New York who claimed that Ralph had gotten her pregnant and then refused to marry her. She had written that if nothing was done to right the situation, she would commit suicide. Hammeras sent a telegram to his father explaining that he had had nothing to do with any such woman and that he was retaining an attorney and a detective to look into the matter. Shortly thereafter, Hammeras' brother reported receiving a similar document; and then, in rapid succession, so did his associates at the studio. A few days later he was summoned to Earl Hudson's office and confronted with several more of the letters which had been sent to the front office. Hammeras explained the situation, and Hudson agreed to help by granting him a few days' leave of absence.

Hammeras had no difficulty in finding a suspect. He began following Hazel O'Brien day and night. One night, at about one o'clock in the morning while Hammeras was camped out in the hallway of her apartment house, he saw Hazel leave with a letter. She crossed the street and dropped it into a mailbox. At that point, Hammeras rushed over to her and openly accused her of trying to destroy him. Hazel became very pale, but said nothing. Hammeras called his lawyer and the two waited at the mailbox until the postman came by to empty it. To no great surprise, they found another of the damning letters inside — this one addressed to Al Rockett, Earl Hudson's assistant producer. The mailman told them that delivery could not be stopped, but he agreed to be a witness to the incident. There were no further letters. Hammeras declined to press charges; and in fact, kept the whole unpleasantness a secret, even from OBie, until many years later. The matter was simply dropped, and Hazel's plot became but an early manifestation of a warped and tormented mind that would later cause her husband immeasurable anguish.



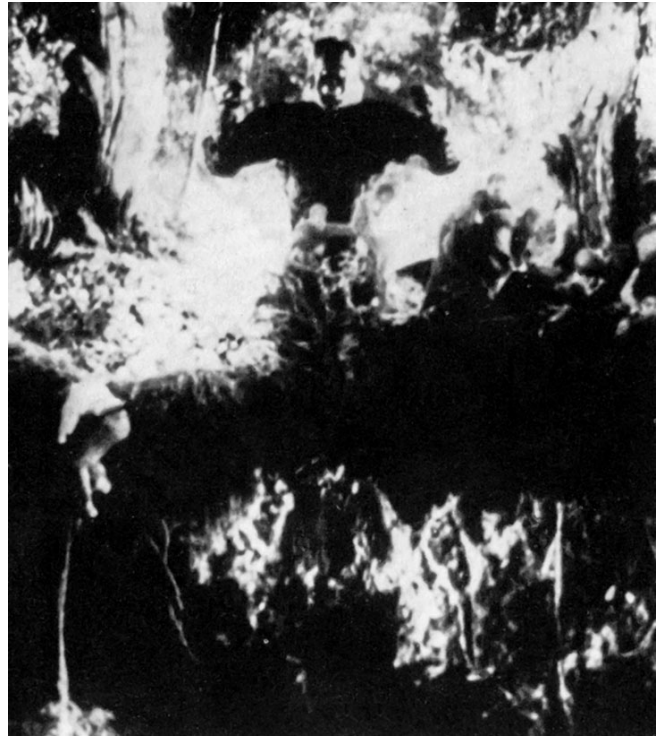
In long-shot, the brontosaurus plucks a miniature sailor from his ill-considered treetop refuge.



The giant log and upper edge of the ravine was built to scale on a stage. Since this particular setup was to be a Dunning traveling matte shot, a large white screen was erected in the rear and flooded with blue light during the live-action photography.



Closer shots were accomplished with a live actor clinging to a full-size tree in front of a rear process screen.



The finished Dunning composite. As was often characteristic of the system, the sailors running along the log are somewhat transparent.



One of the early Kong prototypes in which Delgado was attempting to incorporate both human and simian characteristics.

Shortly after completion of *The Lost World*, O'Brien and Ralph Hammeras began preliminary work on a follow-up production called *Atlantis* — misleadingly referred to as a sequel in early studio press releases. It concerned a vast underwater empire, the major portion of which was constructed in subterranean caverns which extended for miles and were thousands of feet high. The caverns were lit by torchlight, and pressure valves held back the sea. Huge stone statues were carved into the walls of the main cavern, which were also honeycombed with small caves used as living quarters. Tunnels ran from the cave auditorium to the sea, and through these the inhabitants of Atlantis would pass to kill fearsome sea beasts and gather foodstuffs from the ocean floor. Small oxygen capsules enabled them to breathe underwater, thus eliminating the need for cumbersome equipment.

The Atlantians were ruled by a monarch who lived in luxury with his court. This monarch controlled an army of supermen that invaded neighboring nations, captured prisoners, and made them slaves. Large celebrations and feasts were given, to which friendly monarchs and their people were invited. Such were the cave-dwelling barbarians of the frozen wasteland to the north. These arctic inhabitants controlled large fields of ice on which roamed herds of white, fur-bearing, prehistoric mammals. In the northlands, also, were huge food lockers where the meat of these massive creatures could be preserved to feed a nation.

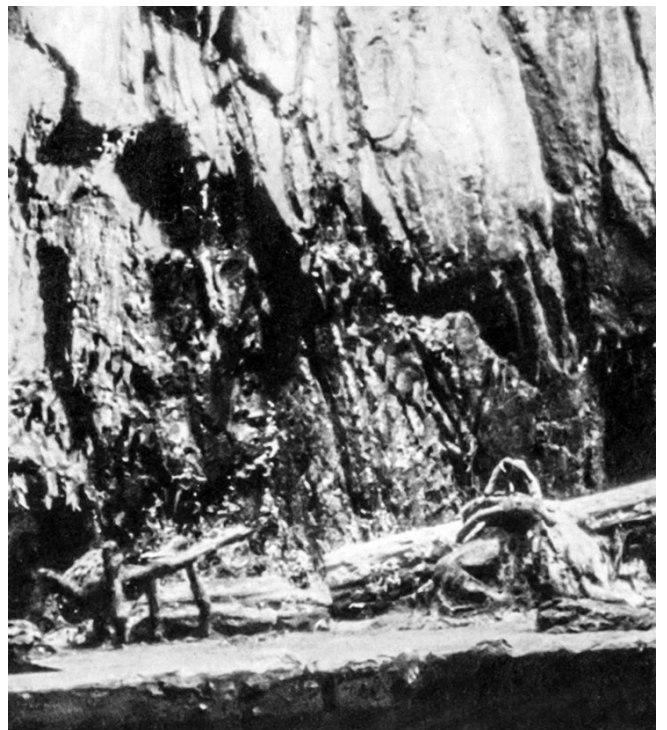
O'Brien and Hammeras prepared many idea sketches for *Atlantis* and had numerous plot discussions with Earl Hudson. However, after about three months of intensive work, they began to suspect that the film would never be made in New York. First National was finding production in New York financially unrewarding. Labor costs were higher than in California, and production capabilities were severely limited to interior work during the long winter months. As a result, First National was beginning construction of a new studio in Burbank, and rumors were rife that the New York staff would be transferred back to the West Coast. Finally, in 1927, the new studio was completed, but orders went out for only selected personnel to be recalled. Hammeras received his transfer, but O'Brien was slated to remain in New York. They knew then that *Atlantis* would never be filmed at all.



Another Dunning shot as Kong shakes the sailors to their death.



A number of the animated creatures included in the initial King Kong test reel were never to make it into the final film. Several, including a triceratops with which Kong was to engage in battle, had been constructed originally for the defunct Creation project.



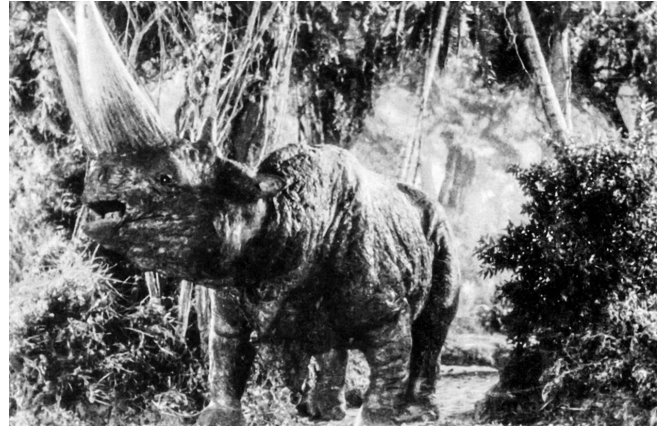
Giant lizards and spiders were to have inhabited the floor of the chasm, and a sequence was shot in which the fallen sailors are attacked and devoured by the loathsome creatures.

OBie was placed on a retaining salary; but Marcel Delgado, who was listed only as a production assistant, could not qualify for it. Instead, he was forced to accept a menial position in the studio prop department, and was very hurt when the other workers shunned him because he was Mexican. They made bitter jokes and remarks about his nationality; and on occasions when he brought his lunch and sat down to eat with the crew, they would get up and leave.

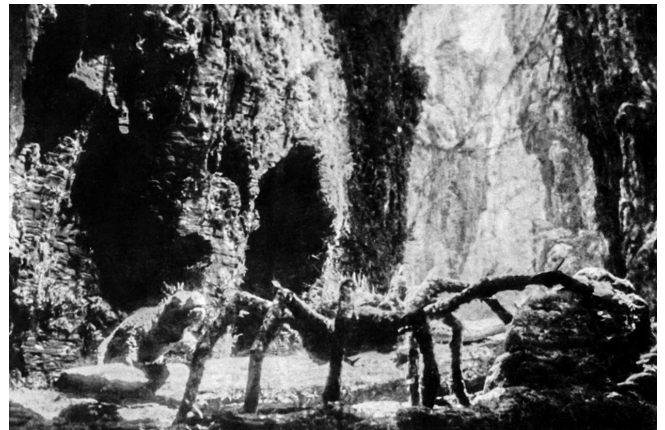
When OBie returned to California about a year later, he took with him the idea for a filmed version of Mary Wollstonecraft Shelley's horror classic, *Frankenstein*. For several scenes in the picture he planned to animate a miniature model of the *Frankenstein* monster in long shots, thus allowing the incorporation of herculean action sequences which would otherwise be impossible, even for an accomplished stuntman. Meanwhile Ralph Hammeras and his crew were to work on a variety of miniatures, the use of which would make feasible many elaborate settings far too costly to build in full scale. OBie succeeded in demonstrating the merits of the idea to First National, and preproduction work began late in 1928. However, after several months, the project was dropped.

The following year First National was annexed by Warner Brothers, but neither Hammeras nor O'Brien was happy under the new regime. Hammeras was the first to leave, slipping out of his contract at Warners and into another with the Fox Film Corporation where he was placed solely in charge of the studio's special effects department. One of his first major assignments there was the construction of a vast, tremendously complex, miniature cityscape for the futuristic musical, *Just Imagine*. O'Brien joined him for a while on the project, but soon shifted over to the Radio-Keith-Orpheum Corporation, where he and director Harry O. Hoyt had convinced production chief William LeBaron to underwrite a follow-on to their earlier trail-blazing collaboration.

The new RKO project was to be another prehistoric opus, entitled *Creation*. The scenario, developed by O'Brien and Hoyt and then translated into script form by Hoyt and Beulah Marie Dix, was clearly derivative of the formula employed to such success in *The Lost World*. Off the southern coast of Chile, a thunderous typhoon and freak waterspout bear down on the defenseless yacht of American entrepreneur John Armitage, who is vacationing with his young son Billy, his socialite daughter Elaine, and Elaine's priggish fiance Ned Hallet. Also on board are Armitage's valet and his



A twin-horned arsinotherium was to have been the catalyst which drove the Kong rescue party out onto the natural log bridge.



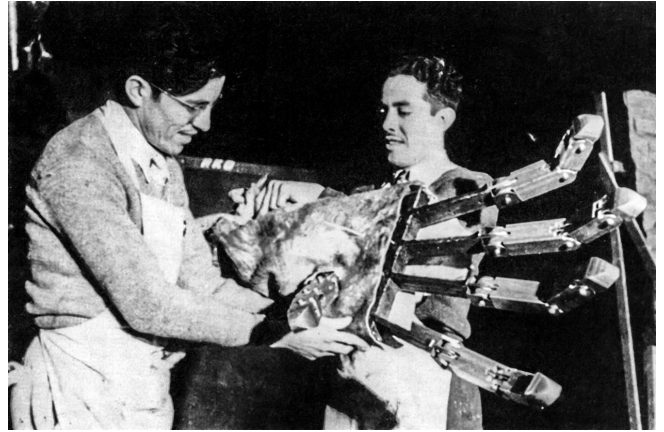
Giant lizards and spiders were to have inhabited the floor of the chasm, and a sequence was shot in which the fallen sailors are attacked and devoured by the loathsome creatures.

ponderously overweight aunt — plus Billy's tutor, Steve Collins, hopelessly in love with the flirtatious Elaine despite her unconcealed scorn for his subordinate station. With only moments to spare, Armitage and his party are plucked from the doomed pleasure craft by the crew of a Chilean submarine which then manages to submerge just as the storm overtakes them. Their relief is short-lived, however. An accompanying underwater earthquake rips a hole in the continental shelf, exposing a large subterranean passage which immediately fills in with water, sweeping the submarine hundreds of miles inland. The jostled vessel finally surfaces, running aground in the middle of a lake inside a vast extinct volcano. The shipwrecked survivors hastily gather what provisions and weapons they can and escape from the sinking boat in a life raft. Making their way to shore, they find themselves in a steamy primordial world teeming with wildlife ranging from contemporary jungle beasts to giant lumbering creatures from the dawn of creation. Since the inward-sloping walls of the volcano render a direct vertical ascent impossible, Steve Collins and the Chilean sailors set out to find an alternate escape route. Only Collins returns alive however. The rest of the party is wiped out when their efforts to bridge a raging river prompt an irritable arsinotherium to attack. After goading some of the sailors to death, the giant horned mammal purposefully attacks and dislodges the others who are clinging helplessly to a pair of palm trees they have hastily felled and stretched across the gorge.

As the weeks pass and hopes of escape diminish, a secluded cliffside ledge is transformed into a more-or-less permanent dwelling and Collins readily surfaces as the party's natural leader — to the intense displeasure of Ned Hallet who persists in doing whatever he can to undermine Collins' authority. Hallet's unwarranted firing upon a peacefully grazing brontosaurus triggers a destructive rampage by the beast — and only the quick response of Elaine, who thrusts a blazing firebrand into the creature's mouth, saves the entire party from extermination. But rather than subjugate himself to Collins' direction, Hallet decides to leave the main party and strike out on his own. Out of duty, and somewhat reluctantly, Elaine accompanies him. Not long after, however, the trigger-happy Hallet slaughters a baby triceratops. Its vengeful mother gives chase, eventually uprooting the giant tree behind which Hallet has taken refuge, pinning him underneath and then goading him to death. Collins finds Elaine and returns with her to the encampment.

Convinced that rescue from the outside is their only hope, Collins salvages the submarine's wireless radio — but finding the unit's crucial leyden jar broken, he, Elaine and Billy set out to find some nonconductive clay from which they can fashion a replacement. In their search, they come across the remains of an ancient temple, and in the forecourt they discover some usable bits of pottery. Elaine, however, is attacked by a pair of pterodactyls, one of which nearly carries her off before Collins manages to shoot it down. When their departure route is blocked by a stegosaurus, the party takes refuge in the temple itself, only to find the crumbling edifice is the lair of a tyrannosaurus rex and her young. Fortunately, however, the two great beasts attack each other rather than the inconsequential humans. Once back at the encampment, the radio is quickly reassembled. But by now, the dormant volcano is starting to stir, and only a few emergency messages are transmitted before landslides force evacuation of the cliffside retreat. Battling their way through a bedlam of fiery vegetation and panic-driven creatures, the castaways make their way to the lake, launching themselves out onto the boiling surface in their flimsy life raft and hoping against hope that their transmissions had been heard. Indeed, before long, two Chilean seaplanes appear, descend into the

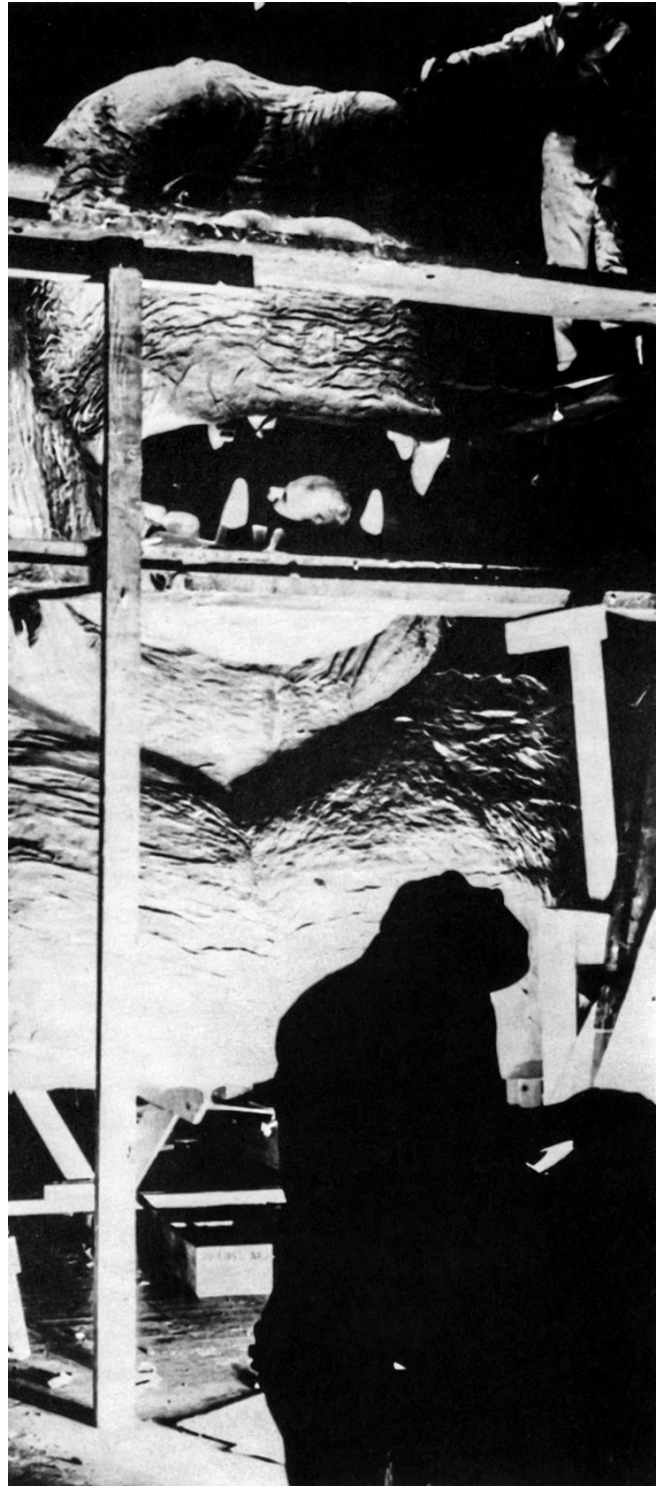
smoldering abyss for a daring rescue, and then climb to safety only moments before the volcano erupts in cataclysmic fury.



In addition to the miniature creatures, Marcel Delgado was charged with fabricating several full-size mechanical props. Assisted by his brother, Victor, he covers the oversized Kong hand which was featured prominently in scenes with Fay Wray.



Delgado and two assistants at work on the pterodactyl talons used in shots where the giant winged reptile tries to carry off Kong's blonde treasure.

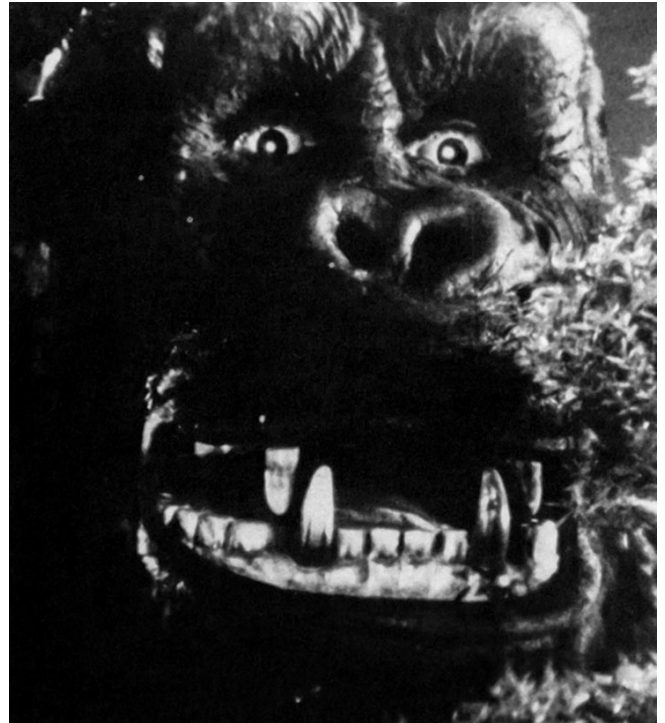


A full-size head and bust was also fabricated and then covered with bearskins. The ape figure silhouetted in foreground is a clay prototype.

A full year was spent on the extensive preparations required to mount the *Creation* project. Working under O'Brien's supervision, studio artist Mario Larrinaga, Byron Crabbe and Ernest Smythe prepared scores of large, detailed renderings of the various creatures, settings and situations called for by the script, as well as hundreds of thumbnail continuity sketches delineating specific setups and camera angles. At the same time, Marcel Delgado — whom OBie had hired away from the miniatures shop at Fox — was hard at work on the model dinosaurs, a number of which had never before, nor since, appeared on the screen. The realistic detail Delgado incorporated into these latest creations far surpassed his earlier efforts.

Ultimately, two brief test reels were to be filmed. One, involving the destruction of the storm-swept Armitage yacht, featured miniature work produced in Don Jahraus' model shop and then photographed in a large glass-walled tank by Karl Brown. Brown, who had learned his trade at the side of D.W. Griffith's ace cameraman, G.W. Bitzer, and who had since gone on to be a respected writer, director and cinematographer in his own right, was also behind the camera for much of the second *Creation* test — taken from the sequence in which Hallet, portrayed by actor Ralf Harolde, shoots the baby triceratops and is then pursued by its enraged mother. The test footage, combining live-action and animation, as well as full-size and miniature settings, represented a quantum leap in technique over the comparatively primitive composite work in *The Lost World*.

Willis O'Brien had been acutely aware for some time that the stationary split-screen matting technique employed predominantly in his first feature was simply too restrictive to allow for the full integration of miniature figures with live-action photography — mainly because the matte line, itself, was inviolate. The "held-take" aspects of the process also presented problems in that retakes for technical deficiencies were impossible unless additional live-action footage was available. So, in the months and



Though it was an impressive piece of engineering, the closeups featuring the full-size head (top) were not nearly as dynamic or effective as some others (bottom) employing the eighteen-inch miniatures.



Though it was an impressive piece of engineering, the closeups featuring the full-size head (top) were not nearly as dynamic or effective as some others (bottom) employing the eighteen-inch miniatures.

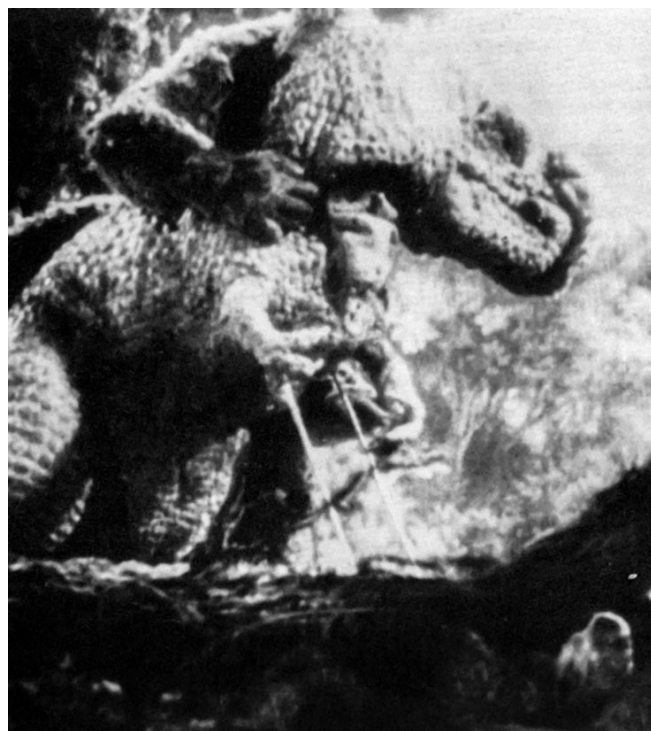
years following *The Lost World*, O'Brien devoted much of his available time to devising a means of overcoming these inherent shortcomings. The end result was his development of a miniature rear projection system which he would subsequently utilize, with various modifications, for the rest of his career. The system, simply stated, employed a small translucent ground glass or rubber screen mounted in a frame with a synchronously operated stop-motion camera and projector positioned on either side. Both camera and projector were capable of independent movement on various axes, so the projected image could be varied in size and positioned wherever desired. Then, on a pane of glass located on the camera side of the screen, an artist could trace the key elements of the projected image and prepare a carefully rendered painting to blend in and surround it. Numerous variations were also possible. Two or more projectors could be used to insert separate live-action elements into a single composition; multiple glass panels, appropriately spaced, could serve to enhance the sense of dimensional reality; and miniature settings could be constructed in front of, or between, the glass paintings. Economically and aesthetically, the advantages over stationary split-screen mattes were manifold. Live-action footage could be photographed on a set no larger than was required to contain the specific action. Stop-motion figures could be made to pass in front of live-action elements, as well as react to specific actions on the rear projection screen. Compositional placement of the live-action element could remain flexible until the final setup was tested and approved; and, though time-consuming, effects shots could be reaccomplished, for technical or other reasons, without sacrificing the approved stage photography. The end result was a much more fully realized integration of live-action and miniature subjects.



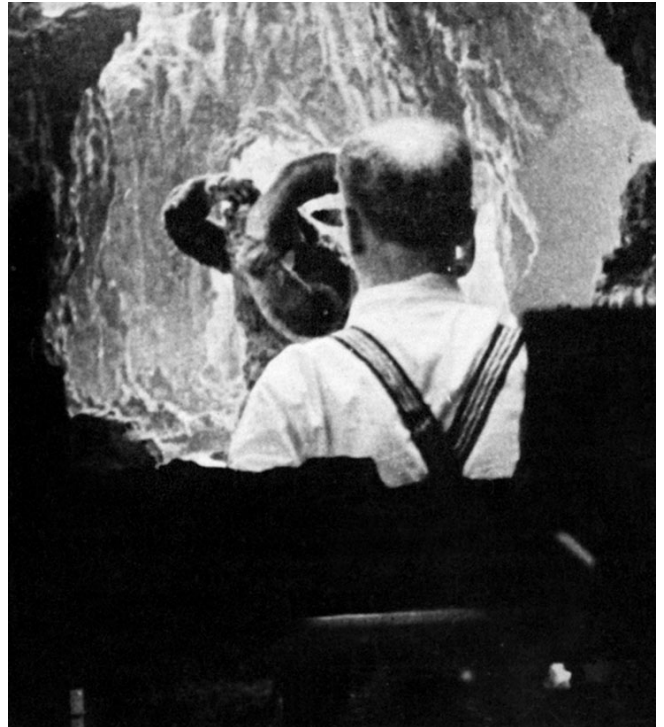
Kong places a miniature Fay Wray into a miniature tree. Other shots in the sequence employed the real actress and a matched full-size tree, combined with the animation via rear-screen process photography or Dunning traveling mattes.



Kong's stand-in posed at the entrance of his cave lair. Stand-ins for Kong and the dinosaurs were carved from wood by John Cerasoli so that the rubber animation puppets could be spared the ill effects of light and heat during the lengthy setup and testing periods.



Support rods — imperceptibly on camera for only one frame — were affixed to the tyrannosaurus' underside to enable the ten-pound Kong puppet to leap onto his opponent's back.



Willis O'Brien animates Kong and the elasmosaurus during their fight in the grotto.



Once the tree is knocked over, a stationary split-screen matte was cut along the top edge of the trunk, with the tree and Fay Wray below the split and the battling miniatures above it.

Having learned his lesson in the aftermath of *The Ghost of Slumber Mountain*, O'Brien promptly applied for a patent on his new idea in April 1928. After a lengthy processing period, the application was approved and OBie was granted all rights to the miniature rear projection system in February 1933 — just a few short weeks before its wonders were to publicly debut in *King Kong*.

In 1930, the seedling of what was to evolve into *King Kong* was conceived in the mind of Merian C. Cooper. The 36-year-old adventurer, whose combat flying during World War I had earned him sixty medals, had already made an impressive name for himself in the motion picture business. He and his associate Ernest

B. Schoedsack, an ace Red Cross combat cameraman he had first encountered during the siege of Kiev in the Russo-Polish War, had traveled to Persia in 1925. There they filmed *Grass*, a dramatic documentary chronicling the treacherous annual migration of the primitive Bakhtiari tribesmen and their sheep from the shores of the Persian Gulf to their summer grazing grounds in the twelve-thousand-foot-tall inland mountain valleys. In 1926, the pair journeyed to Siam for Famous Players-Lasky and made a quasi-documentary called *Chang*, which depicted the lives of the Laotian tribesmen and included footage of man-eating tigers and a staged elephant stampede through a native village. Paramount then sent them to Portuguese East Africa and the Sudan for a year's location shooting which was later carefully intercut with studio photography of the principal actors for the *The Four Feathers*. This economical method of combining location footage and studio photography was to become standard procedure for most Hollywood film companies.

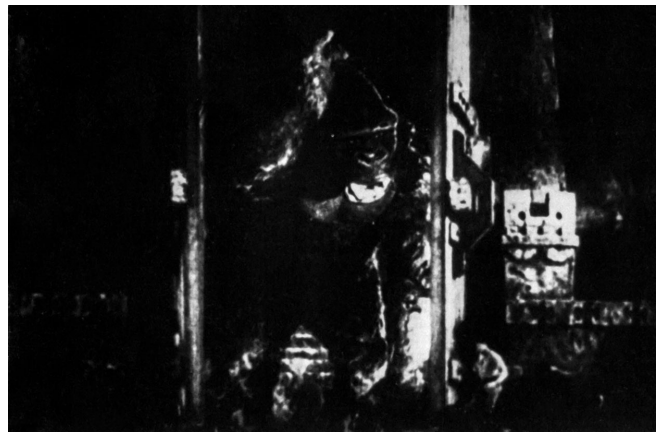
During location filming for *The Four Feathers*, Cooper developed a strong interest in baboons and gorillas, and when he returned to New York he brought with him the idea of filming a gorilla picture. At the time, public recognition was just being made of the giant carnivorous dragon lizards of Komodo, and it was his hope to film part of the picture in Africa and then transport his gorillas to Komodo for a fight with the oversized lizards. Cooper's enthusiasm, however, was less than contagious. Despite his superlative track record, none of the New York studio chieftains he approached was willing to finance the costly African expedition and the subsequent trip to Komodo.



Kong and the elasmosaurus. Live-action Fay Wray and Bruce Cabot are rear-projected onto small screens built into the miniature set.



Kong battles the elasmosaurus. Fay Wray inserted via miniature rear projection.

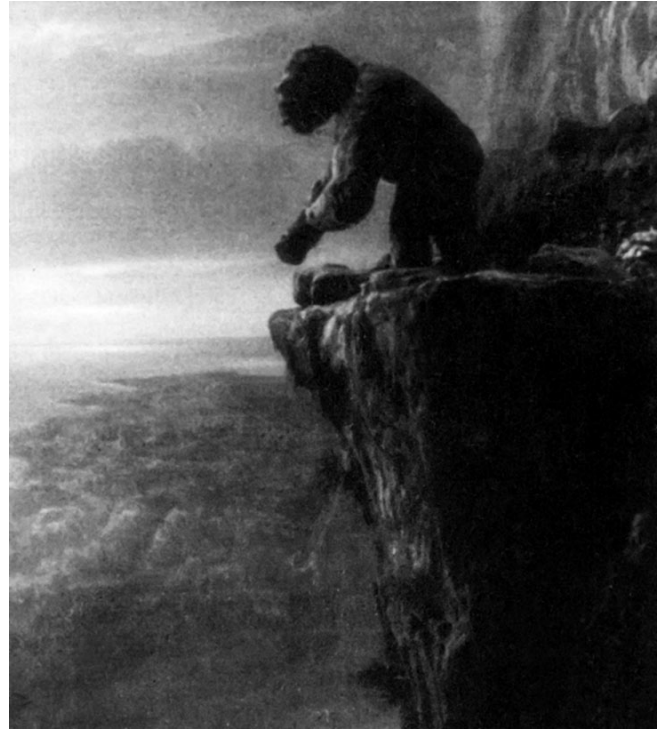


The Williams traveling matte system enabled live actors to pass in front of the animated ape when Kong bursts open the giant restraining gate.

In October 1931, RKO's board of directors appointed David O. Selznick vice president in charge of production, replacing William LeBaron who had guided their faltering production arm to the brink of bankruptcy. Selznick, who had acted as associate producer on *The Four Feathers*, asked Merian C. Cooper to conduct an immediate investigation of the studio's financial and production problems. One of the films Cooper was given to evaluate was *Creation*, which had already been placed in preproduction limbo by the leery Selznick who was frankly unconvinced of its commercial appeal. In fact, had it not been for the hefty \$120,000 in development costs already charged against the project, *Creation* would in all likelihood have been scrapped out-of-hand. As it was, though, Cooper was asked to see if the investment could be salvaged. When he saw the script and the test footage, he was impressed — but only with the technology.

Realizing *Creation* would most likely be shelved permanently as a result of Cooper's evaluation, O'Brien determined to try and make the best of the situation. He had heard of the gorilla picture Cooper was trying desperately to launch, and so he and Byron Crabbe prepared an oil painting depicting a scantily-clad cave woman and a modern-day explorer being menaced by a ten-foot ape. OBie painted the ape; but since his women always came out looking like wrestlers, he left the rest to Crabbe. O'Brien showed the finished work to Cooper and told him that he could make a miniature ape appear that large, or even larger, with his stop-motion effects. Cooper was extremely enthusiastic. With OBie's technical wizardry, he could film his picture entirely in the studio and thereby eliminate both the need for location filming and the use of live gorillas and lizards.

In later years, Cooper insisted that he had always intended, through camera trickery of one sort or another, to make his ape gigantic in size and to somehow transport it back to civilization. Whether he had or not, the idea was now firmly implanted;



Kong hauls up the rope vine by which Driscoll and Ann are attempting to escape. The miniature ledge setting is backed up by a glass painting of the trees and sky. Water is rear-projected into the painting.



Gas bomb explosions were superimposed over the completed animation footage.

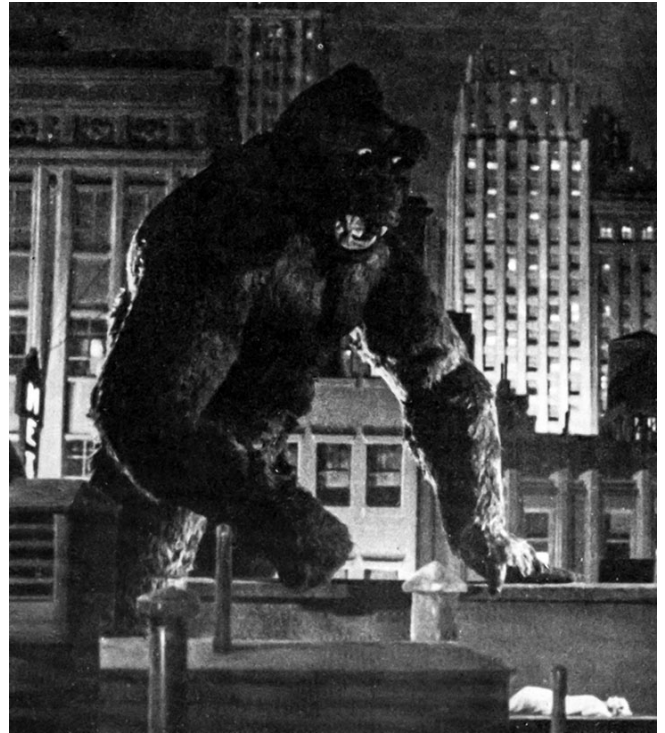
and in consort with O'Brien, Byron Crabbe and Mario Larrinaga, he began working on a revised concept for his gorilla picture. His earliest ideas centered around the members of a hunting expedition who are out to capture conventional wild animals for circuses, but instead encounter a giant ape on a prehistoric island. Overpowering the beast, they return with it to New York where it escapes on a rampage only to be killed atop the world's tallest building. To flesh out the concept and provide a more sound dramatic thread, Cooper engaged the services of the noted British novelist and playwright, Edgar Wallace. Wallace, an incredibly prolific mystery writer who seldom spent more than nine days writing a full-length work, had come to the United States in November 1931 to fill a lucrative three-month script-writing position at RKO. Late in December, Cooper met with Wallace, showed him around the effects facility, and provided him with a copy of the preliminary treatment he had been developing on his own. Five days later Wallace submitted a first draft screenplay, then known simply as *The Beast*, but shortly thereafter died suddenly of pneumonia. Though most of Cooper's story elements were maintained, Wallace's personal embellishments included the insertion of some escaped convicts into the plot and his endowment of some gentler, more human characteristics to the giant ape. Neither idea appealed much to Cooper, and although the final shooting script bore little resemblance to Wallace's original scenario, his name was nevertheless retained as co-author, primarily for its anticipated drawing power in England.

Cooper succeeded at once in demonstrating the inherent weaknesses of *Creation* to Selznick and his superiors. Then, at the same time, armed with a rough story-line and four detailed illustrations by O'Bie, Larrinaga and Crabbe, he endeavored to convince them of the merits of his own giant ape idea. Selznick was willing to back Cooper's proposal, but the New York executives were more reserved, agreeing only to authorize the production of a single reel which they would then test at an upcoming sales meeting.

Willis O'Brien was appointed chief technician for the new project and most of his crew from *Creation* was retained. Of immediate concern was the design and construction of the giant ape miniature — a tasking which fell, appropriately enough, to Marcel Delgado. Responding to Cooper's initial request for something that featured both simian and human characteristics, Delgado first produced a hybrid creature that Cooper thought looked thoroughly ludicrous. A second, more apelike, variant was also rejected; and it was not until the third version — virtually devoid of human elements — that the figure was approved. Meanwhile, Byron Crabbe and Mario Larrinaga had been named art technicians. Working from O'Bie's many hundreds of thumbnail sketches, and keeping in mind his expressed desire to capture the moody eeriness of Gustave Dore's classic engravings, the two artists produced dozens of highly detailed conceptual drawings and were later to be responsible for the stunning foreground and background glass paintings employed throughout the film.

Concurrently, the model shop was engaged in producing the miniature sets — tabletop structures of wood and plaster on which O'Brien would do the actual animation. Detailing of the lush miniatures was given over largely to Orville Goldner, a former puppeteer and physical effects rigger. Working over basic forms of wood and wire, Goldner would sculpt great twisted trees from modeling clay, covering them with layers of toilet tissue and shellac and then painting them. Treetop foliage — wired onto the fabricated branches — often consisted of appropriately scaled sprays from small plants and shrubs. Lesser trees and vines were fashioned from gnarled grape roots, while palm

fronds, ferns and large-leafed plants were meticulously cut from paper-thin sheets of copper. Many of the settings were also dressed with succulents and other live flora that were sufficiently minute or vague in form so as not to betray the miniature scale. Areas on which the puppets would be animated were left as flat, unfinished surfaces with holes drilled in them to accommodate the tie-down rods which were passed up through the table and clamped securely into the underside of the puppets' feet. When photographed, these working surfaces could be concealed through a combination of foreground set pieces, glass paintings and careful placement of the camera.



Most of the jungle footage was already completed by the time work began on the New York sequences. When it was found that Kong looked too small in the city's concrete canyons, the puppet was rescaled to twenty-four feet in height as opposed to the eighteen-foot apparent size used throughout the earlier island scenes.

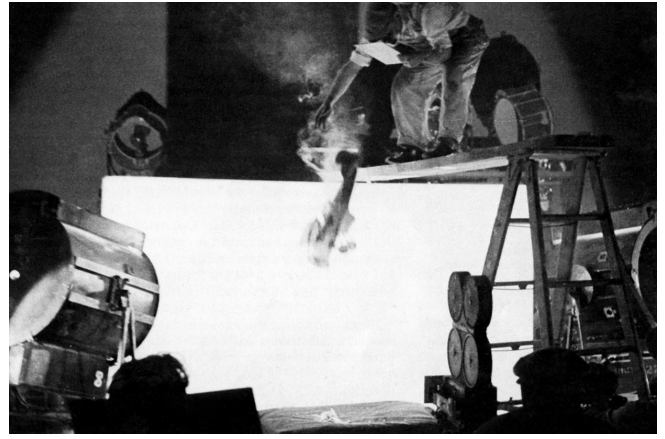


O'Brien's assistant, Buzz Gibson, animates Kong climbing up a peg ladder representing the side of the Empire State Building.



Kong awaits the arrival of the elevated train in the last animation sequence completed for the film.

Few people in the civilized world can be unfamiliar with *King Kong* and the saga of Carl Denham (Robert Armstrong), the reckless film producer who in the company of an old associate, Captain Englehorn (Frank Reicher), mounts a photographic expedition to an uncharted island inhabited by prehistoric beasts and the giant ape-god Kong. Kong, grotesquely infatuated with Denham's leading lady, Ann Darrow (Fay Wray), carries her off into the jungles, but she is eventually rescued by Jack Driscoll (Bruce Cabot), the first mate. Kong is subdued and brought back to civilization. In New York, Denham plans to exhibit his giant ape as the Eighth Wonder of the World; but on opening night Kong escapes, and with Ann in his massive paw climbs the Empire State Building where he is shot down by four Davy biplanes.



A stage technician releases a smoking biplane in front of a Dunning screen.

Though the story was still little more than a basic outline, Cooper went about preparing his trial reel as though he were beginning a fully authorized production. Full-size sets were built to correspond with sections of the miniatures; and principal members of the cast were selected and hired on. Since the future of the picture depended on its initial impression, no amount of effort was considered too great. O'Brien's film magic was to dominate the reel, which would feature not only the giant ape, but also the already-completed triceratops, arsinotherium and tyrannosaurus models left over from *Creation*.

Weeks later, the finished reel was in the can, and it proved to be a sensation at the RKO sales meeting. The sequence Cooper and OBie had chosen to make or break the film began with the tail end of the *Creation* test in which the Hallet character was dispatched by the angry triceratops. It then shifted away to the remaining members of the Kong rescue party who are pursued by a giant arsinotherium, driven out onto a fallen tree trunk bridging a ravine, and then shaken to their deaths in the chasm below by an enraged Kong. As an additional clincher, they included the subsequent battle between Kong and the tyrannosaurus. Without exception, the RKO executives recommended continuation of the filming — initially under the title *The Eighth Wonder*.

Even then, however, Cooper was not without problems. For one, his \$500,000 budget — twice that of an average RKO production — was still chafingly tight for the picture he wanted to make. Then, to a man, the RKO front office wanted to begin the film with Kong on the island. Cooper, on the other hand, felt strongly that it should have a slow, dramatic build-up, thereby allowing time to introduce his characters, the love interest, and the apprehensive mystique of Kong and his island. After several board room skirmishes, Cooper succeeded in winning his point and launched immediately into production — without a script. James A. Creelman had already been assigned to rewrite Edgar Wallace's scenario; but in the meantime, Cooper began shooting sections of the island sequence which were basically visual and had already been worked out in detail. Actors were brought in a for a few days or weeks at a time, and then released until later portions of the script were completed. Changes and refinements were thus made in progress as numerous versions of the script were

drafted and revised — first by Creelman, and thereafter by Ruth Rose, who as wife of Ernest B. Schoedsack, had seen more than her share of jungle adventures firsthand. The husband-and-wife team, in fact, had only recently returned from Sumatra and the filming of *Rango*, another exotic adventure featuring a small boy, a pet orangutan and a man-eating tiger. Schoedsack had next been slated to direct *The Lives of a Bengal Lancer* for Paramount; but during a production lull, Cooper managed to lure him away to RKO.

Schoedsack was ultimately to share directing credits on both *King Kong* and the concurrently filmed Joel McCrea feature, *The Most Dangerous Game*. Based on Richard Connell's classic short story, *The Most Dangerous Game* centered around a madman (Leslie Banks) on his own private isle who has tired of conventional game hunting and prefers instead to make sport of any human unfortunate enough to find his way onto the island retreat. Produced by Merian C. Cooper, the film featured Fay Wray, Robert Armstrong and other familiar faces from *Kong* — as well as many of the same sets. It is, in fact, generally conceded that Cooper coerced RKO into making *The Most Dangerous Game* — a taut little thriller in its own right — primarily so the expensive jungle settings he needed for *King Kong* could be charged against another production. In any event, the marshy jungle sets, designed in modular sections so they could be arranged into varying configurations, were erected on the RKO sound stages and put to ample use on both productions. Schoedsack would shoot *The Most Dangerous Game* on them during the day; then at night, Cooper and his *Kong* unit would move in and take over.

Compared with the technology needed to produce *King Kong*, OBie's revolutionary work on *The Lost World* six years before seemed elementary. In *The Lost World*, scenes in which live performers and animated miniatures appeared on the screen together had been relatively simple to achieve since the actors were, for the most part, mere spectators to the prehistoric enactments. However, in *King Kong*, the live performers, especially Fay Wray, were active participants in the prehistoric drama and it was often necessary for them to come into direct contact with the animation miniatures.

For *King Kong*, as with *The Lost World*, Willis O'Brien designed the skeleton armatures over which Marcel Delgado built his models. Kong, of course, was a principal player. So to augment the earlier test-reel prototype and avoid down-time for repairs, a second of the intricately detailed ape figures was engineered and constructed. In addition, Delgado crafted a small array of miniature dinosaurs which, to this day, remain virtually unparalleled. His stegosaurus, brontosaurus, tyrannosaurus and pteranodon, not to mention various saurian creatures and even birds, were masterpieces of miniature detail. Had *Creation* proceeded as planned, Delgado's workload would have increased staggeringly — with perhaps a proportionate diminution in overall quality — since the script was akin to *The Lost World* in that it called for a vast abundance of prehistoric wildlife. One panoramic shot alone called for some thirty of the antediluvian creatures. Delgado's preproduction work on *Creation* had, however, led him to improved methods of model construction which greatly enhanced the later *Kong* puppets — and thereby the overall effectiveness of the animation sequences. Rather than sculpt a clay model and then use it to prepare a plaster mold, Delgado used his clay rendering only as a guide. Directly over the steel skeleton he constructed latex rubber muscles which stretched and flexed realistically. Next he stuffed the armature with cotton which he shaped into the basic form of the animal. Then, working from his clay model, he applied liquid latex to the figure, giving it shape and detail as it dried. The latex itself, appropriately painted, provided a

suitable outer skin for his dinosaurs; but for his miniature apes, Delgado used close-cropped rabbit pelts, cut into strips and adhered with glue.

With assistance from his brother Victor and numerous other studio craftsmen, Delgado also built full-size models of Kong's head and shoulders, one of his paws and a foot, and also the talons of the pteranodon which snatches Fay Wray and nearly carries her away. These full-size representations worked on joint mechanisms very similar to those employed in the miniatures. The Kong bust was so massive that it took forty bearskins to cover it and six men, inside and out, to operate the numerous mechanical controls.

In order to properly integrate live-action and miniature elements, six-inch-tall articulated human figures, scaled to the size of the miniature prehistoric creatures, were carved from wood by studio sculptor John Cerasoli. Thus, whenever Ann Darrow was lifted or carried by Kong in long-shot, the figure was only a six-inch version of Fay Wray animated to squirm convincingly. O'Brien's job was facilitated somewhat by having her in a dead faint much of the time. These animation sequences, intercut with closeups of the real Fay Wray in the full-size paw, were sufficient to effectively achieve the desired illusion.

One particularly noteworthy sequence employed both the full-size Kong hand *and* the miniature puppet. Kong, having battled human pursuers and prehistoric beasts to protect his sacrificial offering, returns to his cave lair. There, on a ledge overlooking the island, the giant ape takes pause to examine his prize, gently peeling the clothing from the tiny white-skinned creature and curiously sniffing its unfamiliar feminine scent. Since the sequence required recognizably close views of both Fay Wray and the puppet Kong, the full-scale hand was employed to elevate the actress off the floor. She was carefully coached on how to react to Kong's curious examination; and then, on cue, her outer garments were pulled away by means of invisibly thin wires running off-camera. Once completed, this footage was used as a miniature rear projection plate positioned directly behind the Kong puppet — which OBie then painstakingly animated so the actions and reactions of both ape and actress meshed properly. At the appropriate moment, the wired garments on the live-action plate



In one of the best-known sequences in film history, Kong meets his end battling biplanes atop the Empire State Building. Live-action shots of real aircraft in the distance were combined with closer shots featuring miniature biplanes suspended on wires and "flown" a frame at a time by Orville Goldner while O'Brien animated the actions and reactions of his bullet-ridden ape.



In one of the best-known sequences in film history, Kong meets his end battling biplanes atop the Empire State Building. Live-action shots of real aircraft in the distance were combined with closer shots featuring miniature biplanes suspended on wires and "flown" a frame at a time by Orville Goldner while O'Brien animated the actions and reactions of his bullet-ridden ape.

simply disappeared unnoticed behind the miniature Kong's body, with O'Brien deftly substituting bits of cloth in the puppet's hand to match the action.

To obtain uniformity, each scene — every change of camera angle — had to be worked out to perfection beforehand since the finished product represented as many as three or four separate miniature and live-action elements. To aid the technical crew, Byron Crabbe and Mario Larrinaga prepared detailed sketches for each camera setup, and these sketches were followed faithfully. Each scene had to be filmed and combined with the others so that the lighting effects were identical and the full-size and miniature settings blended perfectly. Most of the more atmospheric shots involved foreground paintings on glass, frequently in silhouette, as well as painted backgrounds, sometimes in several levels. In between was the miniature set — on which OBie, or occasionally his assistant Buzz Gibson, would animate the models — and the rear projection screen, or screens, where previously shot live-action footage would be projected a frame at a time. To insure proper lighting balance, it was necessary to shoot test strips of each scene, which were processed immediately on the stage in a portable darkroom and viewed to see if the desired results had been obtained. If they had not, adjustments were made and another series of test frames taken. When satisfactory results were achieved, sometimes after a dozen or more critical adjustments, OBie and his crew would finally begin on the footage which would actually be used in the film. Planning this proper combination was the task of Carroll Shepphird, a young man in the RKO art department who wanted to work in special effects and convinced OBie to include him in the *Kong* unit. Achieving properly balanced composites was not the only time-consuming aspect, however. The stop-motion process itself — slow at best, even on *The Lost World* — had been made even more so by the intervening advent of sound which had prompted the adoption of a new film industry standard of 24-frame-per-second photography, a factor which in itself accounted for a fifty percent increase in animation time. In all, the *King Kong* effects work required a laborious fifty-five weeks of production. Even so, OBie and his crew refused to let expedience interfere with the achievement of their desired end results. As if it were not sufficiently difficult to combine the live and animation sequences, O'Brien complicated things even further by adding extra touches to perfect his illusions. Much of the brontosaurus sequence was shot in the water which necessitated using completely mechanized models — including a head, neck and back assembly mounted on a small wooden cart which could be towed along through the water. In various shots, small birds, totally unnecessary to the plot, fly by as Kong carries Fay Wray through the prehistoric jungle; streams flow through some scenes; and in Kong's cave, steam issues forth from fissures in the rock floor — all necessitating separate mattes and process work.

Although most of the effects shots were designed to be accomplished either as straight animation setups or with O'Brien's miniature rear projection system, other techniques were sometimes required — particularly when it was necessary for live-action characters to pass in front of the animation figures. If the shot was tight enough on the live action, animated background footage could be incorporated via traditional rear-screen process photography. Although the basic rear-screen technology had been worked out years before, its application in *Kong* was considerably more polished — due in large part to the recent development of a flexible, cellulose-acetate screen which produced a high-resolution image without the objectionable hot-spots and illumination fall-off characteristic of older translucent glass varieties. Despite its apparent simplicity, rear-screen

process photography required careful lighting and precise synchronization of projector and camera. In fact, the first such work ever attempted at RKO — a short sequence from the initial test reel featuring Fay Wray perched in a tree as the tyrannosaurus approaches — required three grueling days of filming because no one was really sure how to make the system work. Once the bugs were ironed out, however, the process became a useful tool and was employed throughout the picture. One particularly effective application involved a long trucking shot past the fallen stegosaurus, achieved by placing Robert Armstrong and his followers on a treadmill which was timed in speed to the camera movement already incorporated into the stop-motion background plate.

Not all of the alternate compositing systems were as straightforward, however. If live-action elements had to pass in front of the animation, but the required shot was wider than the sixteen-by-twenty-foot rear process screen could accommodate, a form of traveling matte had to be used. The favored system at the time was the Dunning process, a complex procedure devised by C. Dodge Dunning and patented in 1927. For the system to work, the background footage — hence the miniature effects — had to be shot first. From the camera negative of this footage, a master positive would be struck and then specially treated and bleached so that the particles of film emulsion were replaced by an orange dye. Then, during subsequent photography of the foreground elements, the orange-dyed film positive — essentially a variable-density filter — would be loaded into a bi-pack camera with negative raw stock running behind it. Foreground subjects to be added into the scene would be illuminated solely with orange light, but positioned in front of a blank screen illuminated only with blue. The blue light printing through the contrasting orange film positive would produce a standard black-and-white representation of the background film image on the raw stock — except over the area obscured by the foreground subjects which, in essence, acted as their own mattes. Meanwhile, the orange light — reflected only off the foreground subjects — would pass through the dyed film positive virtually unaffected by variations in its density. So it, too, would produce a standard black-and-white image on the raw stock. Thus, the foreground and background elements could be sandwiched together with only one in-camera operation.

The inherent complexities of the system, coupled with the fact that it was impossible to accurately preview the composite and difficult to correlate foreground action with the background, made the Dunning process a less than desirable means of achieving effects shots in volume. But it was used sparingly when nothing else would suffice, and the results were often remarkable. Wide shots of the brontosaurus rising behind the raft, Fay Wray in the tree during the Kong and tyrannosaurus fight, and the chilling head-on views of Kong shaking the sailors from the log were all carefully executed Dunning shots.

Another form of traveling matte was required for the scene where Kong bursts through the massive restraining gate and into the native village. Use of



[illegible]

ormal white light on the foreground subjects. The matte pioneer Frank D. Williams. In its photography of foreground action against a background on high-contrast stock, a silhouette in bi-pack with the original background ground subject area left unexposed. This gain, along with the original foreground the silhouette window left in the background. It could be made and intercut with the rest of the process was plagued by imprecise camera spread, and image spread in the silhouette usually noticeable matte lines. Nevertheless, the *Lost World* where it was used to London street scenes. The system was refinement — which, like the Dunning action — was unveiled shortly after *King Kong*

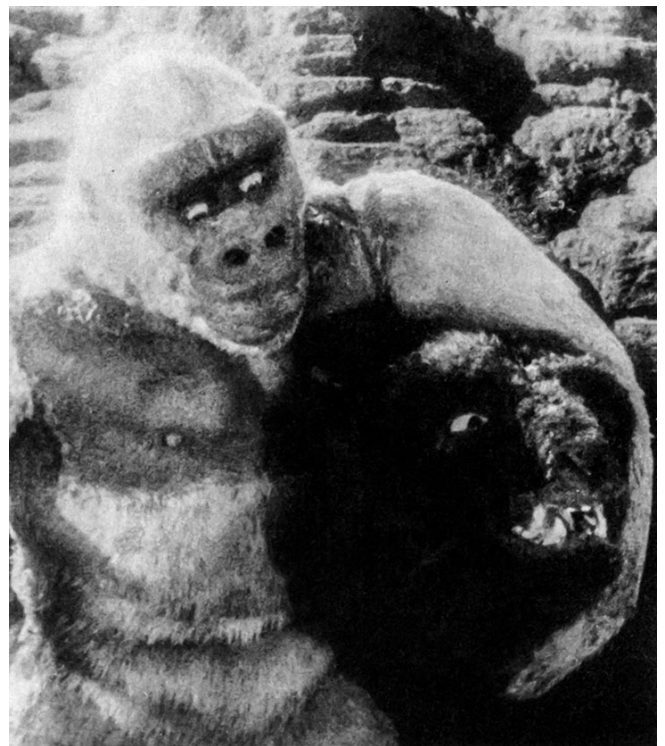
new Williams double-matting system Williams process worked its wonders in the — coupled with RKO's new precision optical along with associates Cecil Love and Bill ty in the compositing of traveling matte y, with matte alignment and density variable ing process — including a tendency to render minated. As a result, the *King Kong* unit tion, and all traveling mattes completed Fay Wray on the sacrificial altar, and later ums shots.

King Kong presented more than just photographic challenges, however. Murray Spivack and his crew had problems of their own. Spivack, as head of the sound effects crew, had the task of devising appropriate sounds for the prehistoric monsters. Kong was the first film of its kind to be made in sound, so there was no precedent for determining what the prehistoric beasts should sound like. Much experimentation was needed to achieve the desired effect. A major problem in manufacturing Kong's roar lay in the fact that most animal roars would have been easily recognizable and of insufficient duration. Kong's thunderous call was the final result of lowering a lion's roar one octave and then re-recording it backwards at a slower speed. Then, since even this was too short, the peaks of the roar had to be lengthened. When Kong beat his massive chest, the sound came from placing a sensitive microphone on a soundman's back and tapping his chest with a padded drumstick. A series of guttural croaks and hisses served for the brontosaurus; the bellowing of the triceratops came from grunting into a double-chambered gourd; and the serpentine hiss of the tyrannosaurus was the combination of a puma's scream and air being released from high compression.

Cooper and Schoedsack functioned as a team in directing *King Kong*, each working with a separate unit rather than together. In general, Cooper directed the action sequences, including the jungle chase and Kong's rampage through New York. Schoedsack, meanwhile, worked predominantly on the expository opening reels, the sacrificial ceremony, and on some of the location shooting. In New York, he positioned his camera crew on top of the Empire State Building and from there shot the live-action biplane scenes for Kong's climactic battle. The process ended up taking twice as long as expected, because the first time the eager pilots ran through their stunts so fast that they barely registered on film. Schoedsack had to charter a plane himself and show them how to draw out a scene so



Willis O'Brien with an unused monoclonius. Taken shortly after the death of his sons, this photo was torn in half by O'Brien who despaired at the anguish reflected in his features.



that proper registration could be obtained. His pilots then ran through the sequence again. This satisfactory footage was intercut and combined with OBie's special effects shots, which were done back at

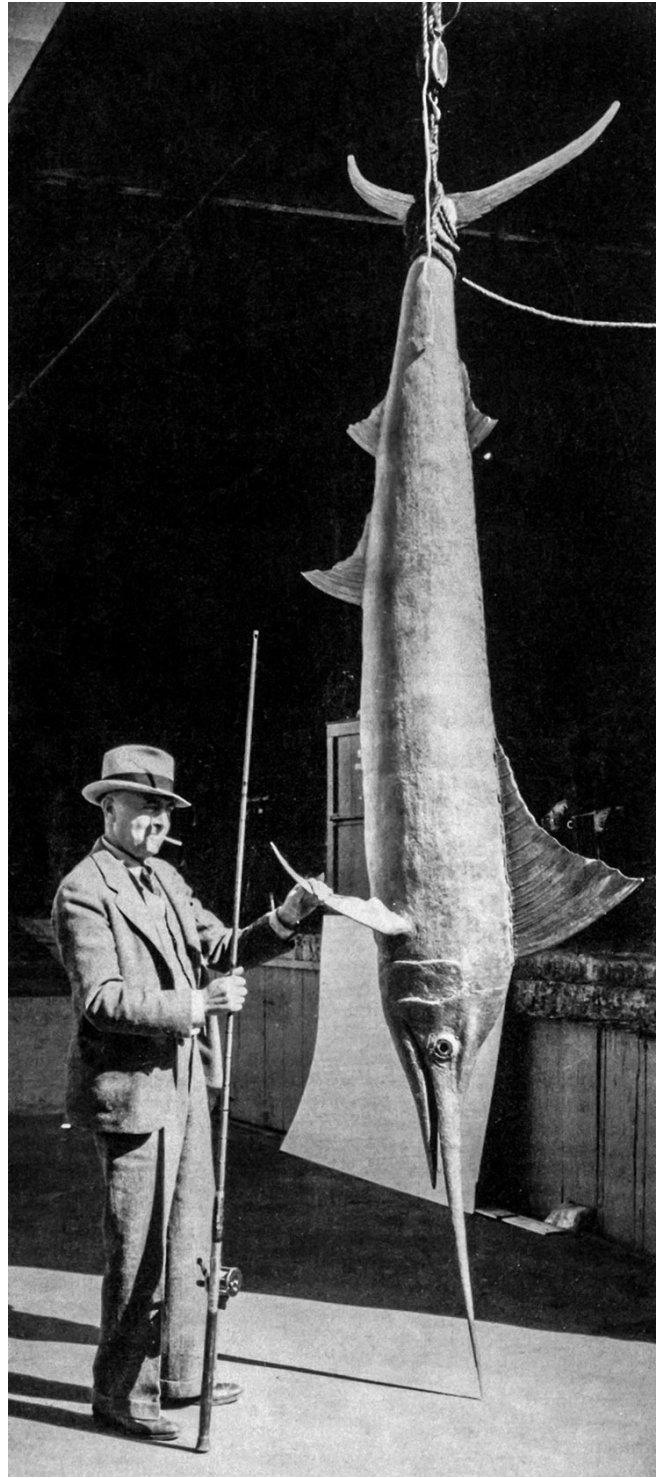
~~Kong's now widely appreciated historical image of the injured ape. The~~
full-size mechanical hand from the original film was reskinned and employed once again for the sequel.

the studio using miniature planes and a scale replica of the upper portion of the famous New York landmark positioned in front of a multileveled cityscape painted on glass panels by Mario Larrinaga and Byron Crabbe. The biplanes, ranging in size from four to fifteen inches — depending upon their intended distance from the camera — were suspended on piano wire flying rigs devised by Orville Goldner. Then, while O'Brien animated Kong, Goldner would maneuver one or more of the tiny craft — one frame at a time — along whatever trajectory was required. Goldner also did the rigging for an innovative aircraft point-of-view shot achieved by mounting the animation camera on a long wooden ramp and then moving it incrementally down the ramp toward the gesticulating ape.

Live-action segments of the theater sequence were filmed in a single day's location shooting at the Shrine Auditorium in Los Angeles, and the initial footage aboard Englehorn's tramp freighter was filmed in the San Pedro harbor. Scenes around the native village and the massive gate were filmed on the back lot of the RKO-Pathé Studio in Culver City. The wall, which had originally been built for Cecil B. DeMille's 1925 production of *King of Kings*, was redressed for a jungle setting and a native village left over from King Vidor's *Bird of Paradise* was erected next to it. Most of the other jungle scenes were shot at the main RKO studio on Gower Street.

At one point, Kong was to have been exhibited in Yankee Stadium, but this was later changed since it was felt that Kong's size would be more imposing in a confined area. There was also to have been a sequence which depicted what happened to the sailors after they were shaken from the fallen log into the chasm. As originally devised, the swampy floor of the ravine was to be inhabited by giant lizards and spiders and by large carnivorous plants. The men, some of them injured and still conscious, were then engulfed by these repulsive creatures. This sequence was filmed and was among those presented to the RKO executives in the initial test reel, but it was never included in the final release, ultimately because Cooper felt that it interfered with the pacing. Completed footage of a styracosaurus, which had been called in to replace the arsinoitherium used in the test reel, was likewise deleted — as was another major segment, uncompleted, involving Kong's encounter with a mother triceratops and her young. As conceived, the monstrous ape was to throw huge slabs of solid pitch at his menacing adversary, breaking the triceratops' horns and thereby rendering it vulnerable to a frontal attack.

Though the film had opened three weeks earlier in New York, *King Kong* was officially premiered at the famous Grauman's Chinese Theatre in Hollywood on the Friday evening of March 24, 1933. The giant, full-scale Kong bust was placed on display in the forecourt, and the gala affair was accompanied by "A Scene in the Jungle," a musical stage revue prepared especially for the opening by Sid Grauman. Soon thereafter, *King Kong* opened to rave reviews throughout the country. Like *The Lost World*, it was hailed as a technical masterpiece, but with an extra dimension — sound. Max Steiner's splendidly atmospheric musical score was also widely acclaimed. One of the first original motion picture scores, Steiner's *King Kong* was composed in only eight weeks on a theme derived from three basic notes.



*Marcel Delgado fashioned a giant swordfish for *The Last Days of Pompeii*. Ultimately, it was never used, but it provided an impressive photo backdrop for O'Brien and his crew.*

Public response to *King Kong* was astonishing. Some felt that the road to success had been paved by Universal with their masterful horror classics, *Dracula* and *Frankenstein*. Others felt that Depression-era escapist sentiments had led to the ready acceptance of fantastic and romantic themes. Cooper and Schoed-sack condensed it to a formula of their own — the three D's: "If you want to make an unbelievable thing believable, make it distant, difficult, and dangerous."

Whatever the reason, *King Kong* was the only film ever to simultaneously play the two largest theaters in the world, the Radio City Music Hall and the RKO Roxy, with a combined seating capacity of ten thousand. Later, when the film premiered in London on Easter Sunday, twelve thousand people had to be turned away. *King Kong* was definitely in a class by itself, and its phenomenal success salvaged the faltering RKO studios from bankruptcy.

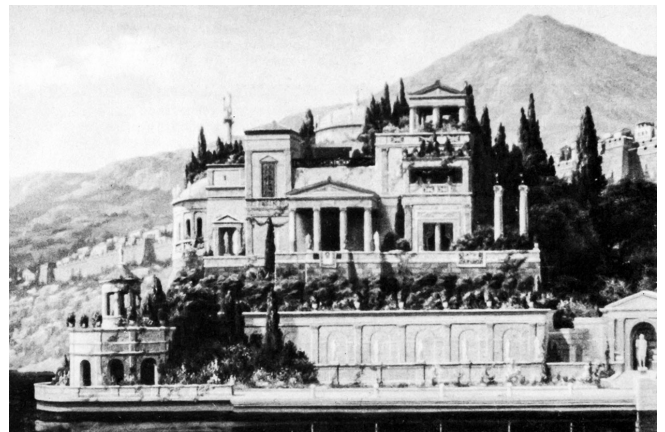
Shortly after its initial release, the sequence which featured the curious ape gently peeling the clothing from Fay Wray, a triumph of timing and technical ingenuity, was decreed too risqué by the censors and clipped from the film. As late as 1952, industry watchdogs were still busy snipping scenes that had been acceptable for Depression audiences but were apparently deemed too gruesome for later more enlightened times. Footage in the native village where Kong tramples the fleeing natives and grinds them in his teeth, and similar scenes in New York, were cut — most notably one in which Kong reaches into a hotel room for a woman he thinks is Ann Darrow and then, discovering his mistake, casually drops her to the pavement far below. Only recently have these scenes been restored to the film.

Although Cooper and Schoedsack had managed to bring the film in nearly on budget, studio accountants tacked *Creation's* preproduction costs onto *Kong's* final expenditures, boosting the official overall production to \$670,000. Nevertheless, *King Kong* recouped its still relatively miniscule investment many times over and was periodically reissued for years to come, scoring high in boxoffice receipts each time.

With *King Kong's* success assured from the very start, a rapid follow-up was certain to be a foolproof investment. Cooper and Schoedsack, quick to realize the fact, proposed an immediate sequel to the RKO front office. The required corporate blessing was secured, but only if the film could be



O'Brien and Byron Crabbe discuss the intricately-detailed representation of Marcus' opulent home, built by Gus White and his miniatures department.



In the film, the palatial structure was backed up by glass paintings of the city, volcano and sky, and enhanced further with projected foreground water.

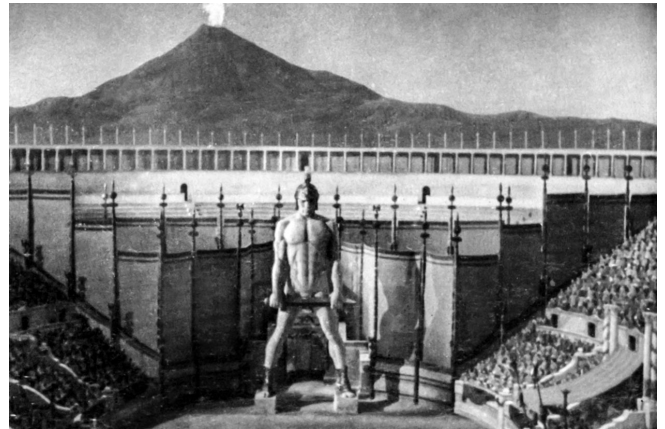
completed for \$250,000 — less than half of what it had cost to produce *Kong*. However, reluctantly, Cooper and Schoedsack agreed.

From conception to release, *Son of Kong* — announced originally as *Jamboree* in an attempt to allay any advance publicity — took only nine months to complete. Robert Armstrong and Frank Reicher were maintained in their original roles, with newcomer Helen Mack introduced as the female lead, Hilda Peterson. Together the trio return to Skull Island to search for a vast fortune in jewels which is reportedly hidden there. Once on the island, they find a somewhat smaller, light-furred version of Kong and rescue him from a bed of quicksand. The playful creature makes friends with his benefactors, and from then on helps them throughout the film, sacrificing his life in the end to save Denham. In addition to the baby Kong, *Son of Kong* featured the styracosaurus whose footage had been scissored from the earlier film, plus a sea serpent, a cave bear, and a fanciful dragon created by Marcel Delgado especially for the sequel. Unlike its stylish predecessor, *Son of Kong* was played strictly for laughs — complete with almost decipherable monkey gibberish — and although it turned a profit, opening to massive crowds on the strength of its title alone, its popularity soon waned.

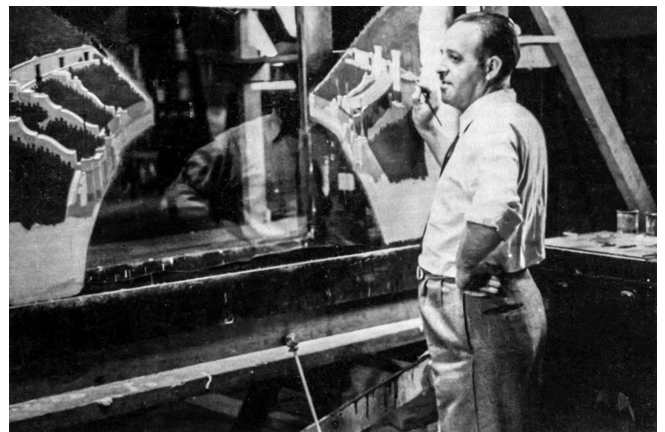
Though it would normally have been expected, *Son of Kong*'s \$50,000 effects budget did not allow for a raise on the part of its chief technician. As a result, O'Brien worked for the same \$300-a-week salary he had earned during *King Kong*. He was, however, compensated with a modest profit participation on the sequel amounting to four percent of the gross receipts over an amount equal to twice the negative cost. Money matters aside, however, considerable friction arose between O'Brien and his producers during the filming. On *King Kong*, OBie and his crew had been left pretty much to themselves — primarily because no one else knew much about effects work — and the filming had gone smoothly. But by the time *Son of Kong* went into production, Cooper and Schoedsack were familiar with the various processes involved and many lengthy debates arose over simple matters which O'Brien felt he could best resolve on his own. Never one to push his protests too far, OBie went to the opposite extreme and washed his hands of the entire project, refusing to contribute anything substantial in the way of personal creativity. The situation, in fact, deteriorated to the point where OBie would simply disappear for a week or more at a time and not even put in an appearance at the studio. As a result, Buzz Gibson wound up finishing most of the animation. OBie felt it disloyal of his old first assistant, but kept his opinion to himself. In the end, he requested even that his name be deleted from the sequel's production credits, but Cooper refused to consider it.

O'Brien's personal problems during the filming of *Son of Kong* contributed significantly to the stress. In early 1930, he and Hazel had parted ways. Although the marriage was not formally terminated, the relationship was, and they were never again to live as husband and wife. Hazel retained custody of the boys. A year or so later, however, she contracted both tuberculosis and cancer, and as a result was under almost constant narcotic sedation. In addition, William, the elder son, had developed tuberculosis in one eye which then had spread to the other, totally blinding him. Still the boys continued to live with their mother, although OBie came frequently to visit and take them on various outings — particularly to football games, which William was able to enjoy from the play-by-play provided by his younger brother.

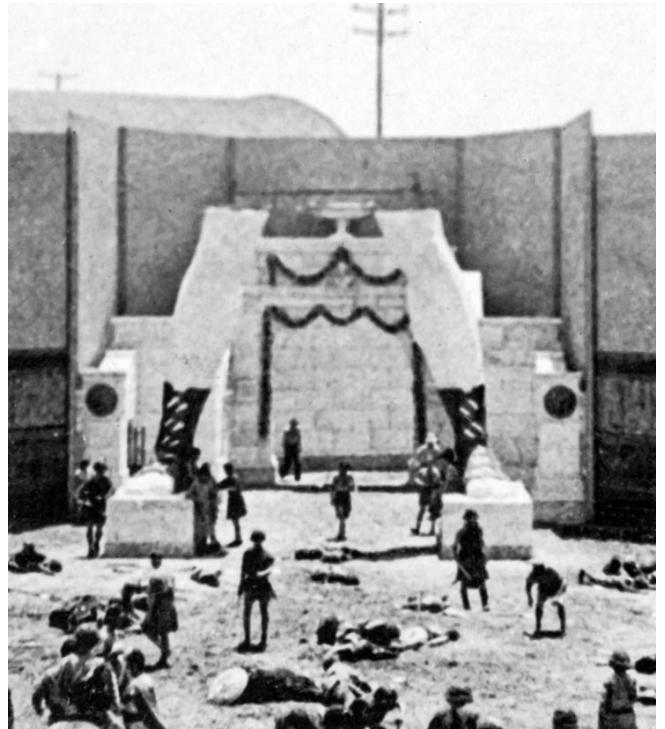
Early in October 1933, OBie brought his sons to visit the studio where finishing touches were being made on *Son of Kong*. Both were enthralled with the work in progress, especially William who was allowed to handle the carefully crafted miniatures he would never be able to see for himself on the screen. Later that same week, at about midnight on the evening of October 6th, a neighbor heard what he thought were shots coming from the O'Brien home. Quickly he called the police who arrived within moments to find Hazel O'Brien lying on the service porch — fully conscious, but with a gunshot wound in her chest. On the floor beside her was a .38 caliber revolver with five spent cartridges. Inside the house, fourteen-year-old William lay dead in bed with two bullet wounds in the chest. His younger brother, also with two chest wounds, was found nearby — alive, but semiconscious. In a despondent frenzy, Hazel O'Brien had shot her two sons and then turned the gun on herself. William had died instantly; Willis Jr. expired on the way to the hospital. OBie was summoned at once and, along with Carroll Shepphird, went to the Westwood Hills home. Heartbroken over the loss of his sons, he sobbed openly as he answered questions from police and reporters.



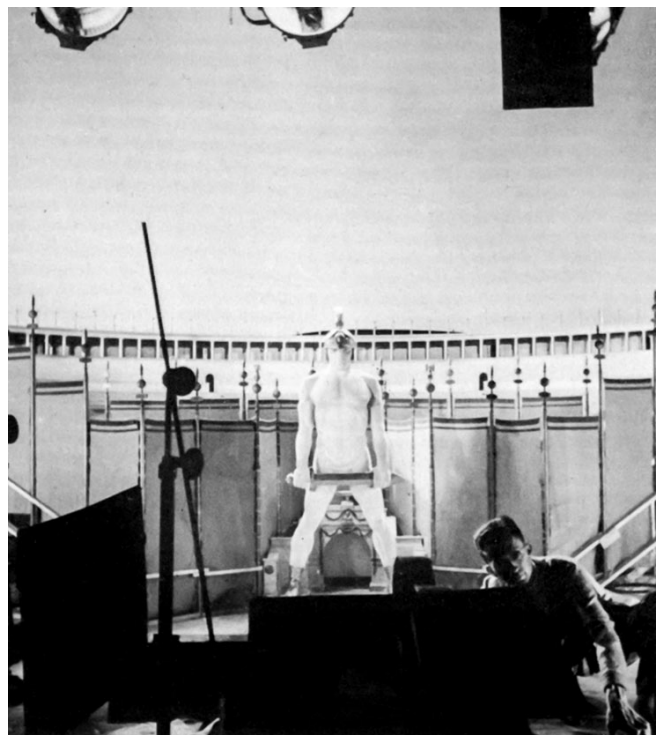
The gladiatorial arena featured a massive Colossus constructed as a six-foot-tall miniature. Grandstand sections to the sides were painted on glass, as was the background volcano and clouds. Billowing smoke was rear-projected into the painting.



Byron Crabbe at work on his painting of the arena. Crabbe died suddenly of a heart attack while the film was still in progress.



Live-action footage for the arena sequence was filmed on a half-set which could be fleshed out with miniatures and paintings when needed.

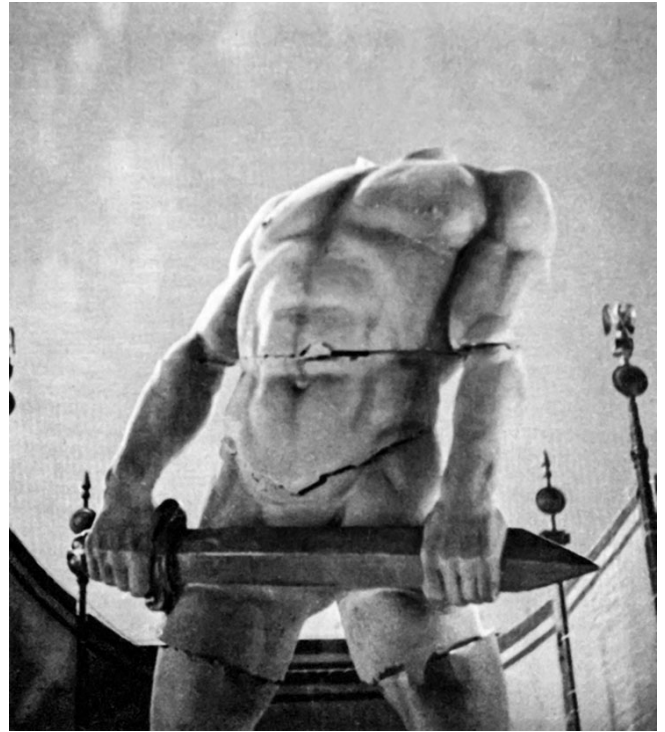


The miniature portions of the arena just prior to filming.

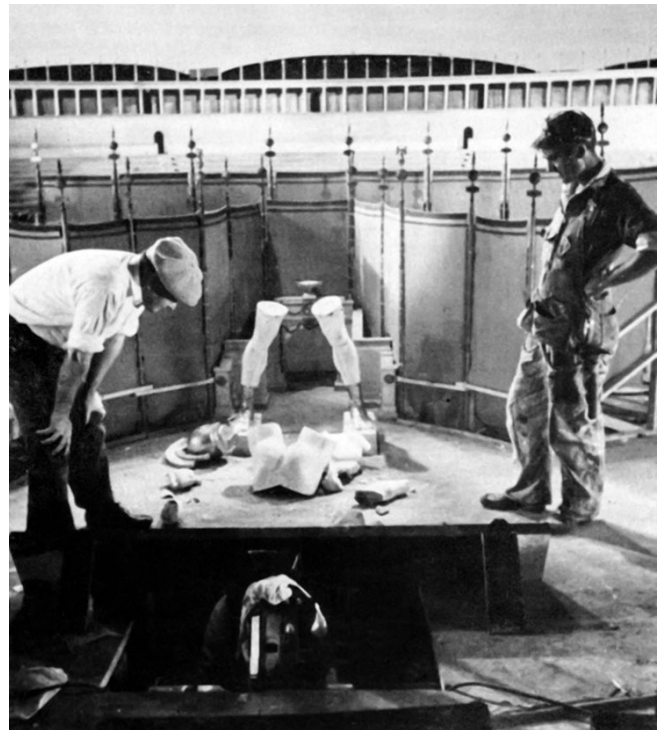
Hazel O'Brien was rushed to the Santa Monica Hospital where she was treated immediately. Told that she might live, she cried that it was the last thing she wanted, proclaiming repeatedly: "I just couldn't sleep, and there was no one to leave the kids with." The weakened woman went on a hunger strike, refusing to accept food for several days until hospital personnel had to resort to forced feeding. Subsequent investigation revealed that the senseless tragedy had been telescoped on at least two earlier occasions. Hazel's father, William W. Collette, advised authorities that his troubled daughter had first attempted suicide as early as 1925 when she deliberately overturned a canoe in Westlake Park, plunging herself and six-year-old William into the water. Both, however, were rescued. Then, years later, the elder Collette had happened by Hazel's home one day and found her passed out on the kitchen floor with all the gas jets turned on. Only his chance discovery and quick reaction had saved her life that day. Both incidents predated her terminal medical condition. Amazingly, her third attempt was no more successful. Despite her every wish, Hazel O'Brien recovered from the self-inflicted wound within a few weeks. Ironically, the bullet — which had entered her chest, passed completely through her body, and exited below her left shoulder blade — had somehow in the process partially drained her tubercular lung. In all likelihood, it actually extended her life.

On November 24th, the Los Angeles district attorney's office issued a complaint of homicide against Hazel O'Brien. Her tubercular condition was considered too critical to try her at that time, however, so she remained in the prison ward of Los Angeles General Hospital. OBie refused even to visit her.

The year had been one of triumph and trauma for Willis O'Brien — and it was not over yet. After the slaying of his sons and his estranged wife's attempted suicide, OBie began seeing a redheaded beauty named Hazel Rutherford. *Son of Kong* was completed, and the romance flourished. Two days before the New Year, however, Hazel Rutherford paid a visit to her doctor who advised her that she



The Colossus — built to break apart on cue — crumbles and collapses as the earthquakes hit.



Technicians examine the remains.

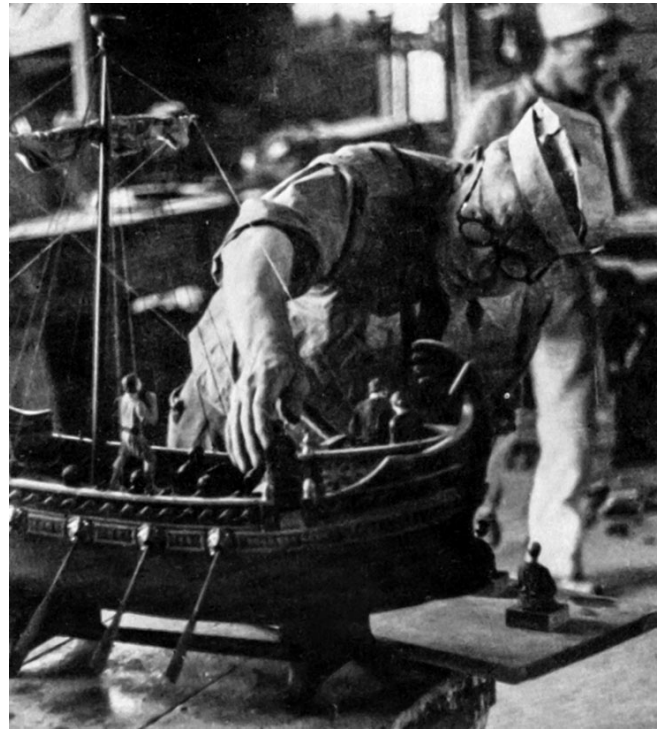
had breast cancer and that a radical mastectomy would be required to save her life. Devastated, she went directly to O'Brien's rented home in the Hollywood Hills. OBie was not there at the time; but his Japanese houseboy, Yoshio, admitted her. Hazel wrote a brief note to OBie explaining her situation and stating that she could not bring herself to submit to the disfiguring surgery. She then went downtown and leaped to her death from the seventh floor of the Mayfair Hotel.

Several months later, O'Brien began dating a young woman from Santa Barbara, Darlyne Prenett. Darlyne, who had changed her name from Dolly some years before when she was hosting a half-hour radio program, was at the time working for a branch of the Borden Ice Cream Company. The pair had been introduced by mutual friends late in 1933, but it was not until March that they began seeing each other. OBie and Darlyne fell rapidly in love and talk soon turned to marriage; but because of Hazel's still-deteriorating condition, OBie was unable to follow through on his wishes or even initiate divorce proceedings.

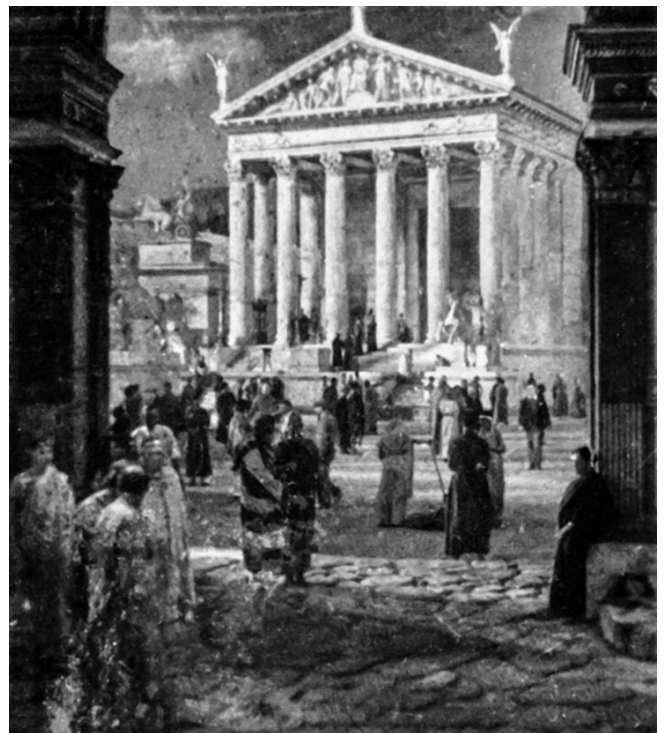
Meanwhile, however, he was given a few preproduction assignments on *Green Mansions*, a passion-charged jungle idyll, starring Joel McCrea and Dolores Del Rio, that was intended as a follow-up to RKO's big-budget prestige picture, *Bird of Paradise*. However, when the celebrated *Bird of Paradise* failed to turn a profit, *Green Mansions* was unceremoniously dropped from the production roster.

In November 1934, more than a year after the triple shooting, the district attorney's office again attempted to prosecute Hazel O'Brien for murder. But once again the county grand jury refused to indict her when physicians reported that she was still too ill to be released from the hospital. The trial was continued to January 7th, but would ultimately never be held. Less than a week later, Hazel O'Brien died — and with her died a part of OBie's life he had tried for so long to leave behind.

On November 17, 1934, Willis O'Brien and Darlyne Prenett were quietly married. They spent a couple of peaceful days in the pleasant Mexican resort of Agua Caliente, below Tijuana, and then returned to Los Angeles since preproduction work had already



Studio sculptor John Cerasoli puts finishing touches on a galley he has constructed.



begun on the new Cooper-Schoedsack spectacular, *The Last Days of Pompeii*.

On the strength of his successful reorganization of RKO prior to *King Kong*, Merian C. Cooper was named temporary vice-president of the company when Selznick left to establish his own independent production unit at M-G-M. As RKO production head, Cooper's contract provided that he receive a handsome twenty percent of the net profits on each film produced under his supervision.

In May 1933, however, Cooper eloped with actress Dorothy Jordan and their delayed honeymoon — a world tour lasting nearly a year — carried them to Pompeii where Cooper became intrigued with the possibility of producing a film centered around the fateful eruption of Mount Vesuvius. An early advocate of color, he entertained hopes of producing the film in the new three-strip Technicolor process. Returning to Hollywood, Cooper decided that he no longer wanted full responsibility for RKO's production facilities and agreed to settle his contract by personally producing two spectacles for them. The first was an adaptation of H. Rider Haggard's adventure classic, *She*, and the second was Cooper's original story masquerading behind Bulwer-Lytton's title, *The Last Days of Pompeii*.

Willis O'Brien had initially been engaged as effects supervisor for both pictures, and at one point *She* was even to have featured some of his stop-motion work. Though Haggard's novel had been set in the wilds of Africa, Cooper had been concerned that cinematic overexposure might be robbing the Dark Continent of its ability to enthrall. Therefore, he had shifted the ageless white queen and her ancient kingdom of Kor from Africa to the Arctic. Then, to help sustain the fantasy-charged ambience, plans were initiated to populate the frozen wastelands with prehistoric remnants from the Ice Age, including a herd of woolly mammoths. All that survived from that particular line of thought, however, was a sabre-toothed tiger frozen solid in a glacial wall. The rest fell victim to budget cutbacks. Shortly before principal photography was to begin, RKO's corporate hierarchy informed Cooper that he would have to produce both *She* and *The Last Days of Pompeii* for the \$1 million he had originally been allocated for *She* alone. As a result, many of the more costly, but not strictly necessary, concepts had to be jettisoned — along with Cooper's plans to shoot both pictures in color. At that point, Willis O'Brien turned his full attention to *The Last Days of Pompeii*.

The highlight of the spectacle was the final scene, which depicted the city's destruction. The city was built on a hill, and the eruption of Mount Vesuvius was depicted as a massive cloud of ash and smoke billowing from the crater. The city was shown being buried under a thick layer of ash, with people fleeing in panic. The scene was a masterpiece of special effects, and it was a major factor in the film's success.



War Eagles was to have concerned a lost race of Viking warriors who ride about on giant prehistoric snow eagles. Duncan Gleason prepared dozens of highly detailed illustrations for the preproduction effort, including a dramatic precipice setting featuring a rope bridge leading over to the eagles' tethering posts.



As scripted by Ruth Rose and Dudley Nichols, the period film concerned Marcus (Preston Foster), a poor blacksmith who, in an attempt to save the lives of his wife and child after they have been struck by a

chariot, consents to fight in the arena. Marcus kills his man and wins the prize money, but it comes too late to save his family. Realizing it was his wretched poverty that caused this great personal tragedy, Marcus devotes his life to the acquisition of wealth. He adopts the son of a man he has killed in the arena and becomes a trader. In his first big financial coup, he consorts with Pontius Pilate (Basil Rathbone) to steal a herd of horses. Soon one of the wealthiest men in Pompeii, Marcus becomes manager of the arena, responsible for providing slaves for the fights. Meanwhile, his adopted son Flavius (John Wood) is secretly helping the slaves to escape. On the day Vesuvius erupts, Flavius is captured with the fugitive slaves and forced to fight in the arena, despite his father's protests. When the eruption occurs and the earthquake commences, panic engulfs Pompeii. Marcus repents. Abandoning his riches, he helps the injured Pompeiians onto the safety of his own boat, and then gives his life delaying the Romans from prohibiting their departure.

Although *The Last Days of Pompeii* required none of OBie's stop-motion expertise, it did involve some of his more intricate work. Marcel Delgado's natural talents were likewise neglected for the most part, though he was called upon to build a full-size reproduction of a giant swordfish. As it turned out, it was never used in the film — but the work was not completely in vain. Hung up by its tail, the great fish provided a splendid photo backdrop for OBie and his crew who posed proudly in front of it with fishing gear in hand.

O'Brien's major responsibility on the picture was for the climactic holocaust in which Mount Vesuvius erupts and envelops Pompeii. Throughout the film, however, numerous establishing shots were inserted to show the volcano's slow build-up to its massive eruption. O'Brien's miniature rear projection system was employed for the majority of these scenes. The city of Pompeii, for the most part, was a glass painting — augmented at times by miniature foreground structures. Necessary ocean-front footage was shot live and rear-projected into the setup. Vesuvius was painted on a second glass panel, positioned behind the first. Like the foreground action, the smoke billowing forth from the volcano's summit was rear-projected. Since it had to vary from a slight wisp to an explosive profusion, thousands of feet of smoke-producing pyrotechnic effects were photographed at speeds ranging from four to twelve times normal and in shades ranging from black to white. These were then carefully culled and appropriate segments selected to fill the requirements of each shot. Flames were inserted either as highspeed film elements or painted onto yet a third glass panel.

Since the script required that Pompeii be shown at various times of the day, correspondingly different setups had to be devised. In the earliest scenes, the city and volcano were painted to suggest a bright sunlit day. Water in the foreground harbor was calm, and smoke from Vesuvius rolled lazily in the background. Later, at dusk, the city had to sparkle with lights and a glowing effect had to emanate from the volcano. Then, at the time of the eruption, the city had to take on a murky hue, the foreground water had to be choppy, and a dense cloud of ash had to obscure the sky.

~~While on his fishing expeditions, the crew gathered foodstuffs in the local markets and applied the oil from the barrels of the oil to the massive wooden supports by overhead.~~

The actual destruction scenes were effected largely through high-speed miniature photography, enhanced and augmented with glass paintings by Byron Crabbe. The miniatures throughout were constructed by Gus White and his crew, working under O'Brien's supervision. One of the more intricate segments involved the collapse of the city's gladiatorial arena. Live-action scenes were photographed in a full-scale half-set, the upper portions of which were completed with glass paintings. Even the giant Colossus which straddled the entranceway was built up only to the knees. For the destruction scenes, a large-scale miniature of the arena was employed, complete with a full, six-foot-tall breakaway representation of the Colossus. The entire segment, lasting only a minute or two, was finally pieced together by intercutting and combining live-action mayhem with a variety of composite effects involving high-speed miniature work, process photography, miniature rear projection and traveling matte.

More important was the destruction of the Temple of Jupiter. Like other scenes in the devastation sequence, the end result entailed the employment of numerous compositing techniques. But the major element in each shot was to be the temple itself. According to authoritative sources, the miniature reconstruction of the towering edifice was an exact replica of the original. Unlike the original, however, it was supported by a mass of hidden wires which were to be released on cue when the man-made tremors hit. In addition, metal rods were placed within the columns. During the earthquake, these were to be incrementally slipped out in stages from below so that the columns would topple realistically. Twenty men were needed to operate all the mechanisms.

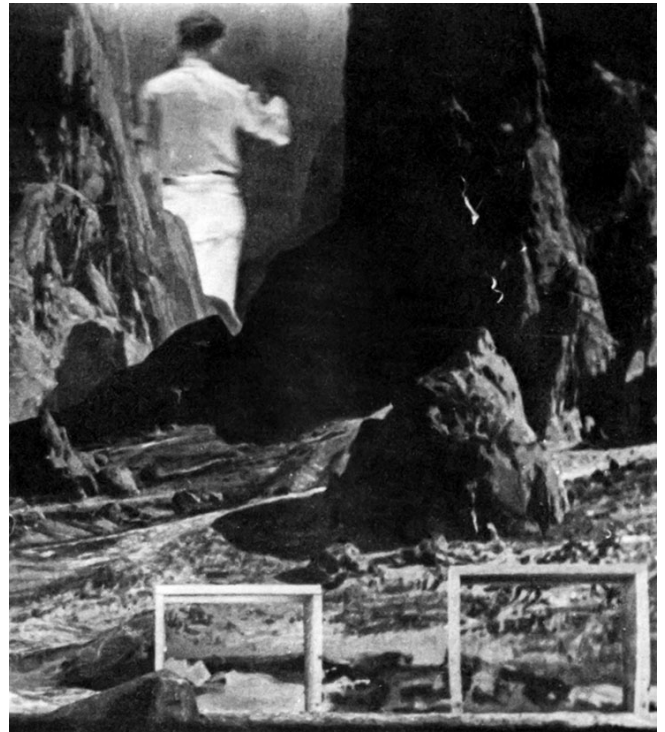


Another Duncan Gleason sketch depicting an attack on the Vikings by an allosaurus. The lush jungle was later to give way to rockier, mountainous terrain.

The complex scene was to be taken simultaneously from four different camera angles with the normal shutter speed increased considerably to create a slow-motion effect and the impression of great mass. Absolute steadiness of the cameras was imperative, and so each was locked and bolted to the floor to prevent any movement whatsoever. It was found that even ordinary footsteps on a solid sound stage could produce enough vibration to endanger the shot, so the entire stage was roped off to prevent any unnecessary personnel from approaching the area of the miniature set.

Multiple tests were made on all aspects of the scene, except for the collapse of the temple itself — that had to be done correctly the first time. A mistake by even one of the twenty technicians could prove disastrous. If anything went wrong and the resulting footage was unacceptable, many weeks would be wasted in rebuilding the set and realigning the cameras — with attendant expenses that would push the entire picture well over budget. As the scheduled time drew near, Cooper and Schoedsack began frequenting the stage more and more, anxiously aware of what was at stake. Shooting was delayed on several occasions in order to allow one or the other of them to satisfy himself on some minor point. Finally, the moment arrived. Effects technicians and cameramen took their positions. O'Brien, directing the entire operation, stationed himself off-camera — giving instructions to the crew over a public address system. Hundreds of flashpots were fired to fill the air with dense clouds of simulated ash, which also served to conceal the stage rafters above. The cameras were started. Vesuvius erupted, the earthquake rumbled, and the Temple of Jupiter toppled — perfectly.

Following his work on *The Last Days of Pompeii*, consideration was given to keeping O'Brien on staff for an anticipated film adaptation of Aldous Huxley's *Brave New World*. When the project failed to materialize, however, he was released late in 1935. Shortly thereafter, OBie did a brief, but impressive, bit of work on *The Dancing Pirate*, which was produced for Pioneer Pictures by John Speaks, one of Merian C. Cooper's production supervisors on *Pompeii*. Pioneer Pictures, in fact, had been organized by Cooper — along with financiers Jock and C.V. Whitney — in 1933, specifically to



A studio artist works on the painted background used in the War Eagles sequence. Wooden frames in the foreground will eventually house rear projection screens built into camouflaging rock formations.



An unbalanced lighting test reveals a live-action Viking projected into the animation setup. Marcel Delgado fashioned several eagles and allosauri for the film.

promote the Technicolor film process of which they were major shareholders. *The Dancing Pirate*, a lackluster musical comedy about a Boston dancing master who is shanghaied by a pirate crew, was nevertheless lauded as the most beautiful of the films being made in Technicolor's new three-color process. Since it was filmed entirely indoors, Speaks hired OBie to create a night scene of the pirate vessel lying at anchor in Boston Harbor. OBie utilized three glass elements to achieve the desired effect. The ship itself was painted on the rear glass which was mounted so that it would rock gently. The center glass had a small skiff and was drawn — by using a hand crank — toward the ship. Moving water was projected on the front glass. The resulting scene was so realistic and beautiful that all of the studio executives at the advance preview broke into applause when it appeared on the screen.

Early in 1938, after an absence of two years from motion pictures, Willis O'Brien once again returned to his specialty, stop-motion animation. As with his previous three major productions, OBie and his crew worked for Merian C. Cooper, who had moved his base of operations from RKO to Metro-Goldwyn-Mayer the previous year. *War Eagles* was an original story by Cooper, which — it was generally believed — would be even more spectacular than the fantastically successful *King Kong* of five years before. After OBie had investigated the special effects ideas, a shooting script was laced together in 1938 from a series of three hundred thumbnail sketches he had prepared.

War Eagles concerned the adventures of history professor Hiram P. Cobb and barnstorming stunt pilot Jimmy Mathews. Cobb, an authority on the ancient Vikings, is convinced that these Nordic adventurers migrated to a "blind spot" in the North Polar region — an area unvisited by modern man. Unable to interest a scientific society in financing an expedition to investigate his theory, Cobb purchases an outdated biplane and engages Mathews as pilot. Over the Arctic, their plane collides with a huge white mass and crashes into the uncharted region. To their amazement, they discover that the climate is temperate. A long and tedious trek up a sheer mountainside leads them to a plateau, and on the plateau is a village inhabited by Vikings, unchanged by centuries of outer evolution. Jimmy makes friends with a Viking princess named Naru and eventually they fall in love. The two "outlanders," as Jimmy and the professor are called, are also befriended by the chief, Atok, and are astonished to learn that the major mode of transportation among the Vikings are huge prehistoric snow eagles, twelve to fifteen feet high. These magnificent creatures, captured and tamed by the Vikings, are ridden like horses with special saddles which straddle their necks. Jimmy proves himself by roping the large white eagle which had earlier caused their plane to crash. The winged beast flies off, but Jimmy holds on, climbing his way up the dangling rope and then riding the giant eagle to submission.

Periodically, it is necessary for the Vikings to fly to the Valley of the Ancients to replenish their supplies from the fertile soil of the valley floor. The valley, however, is inhabited by ferocious prehistoric beasts, making it necessary for the Vikings to be quiet and secretive in their harvesting to avoid attracting any undesired attention. On Jimmy's first visit to the valley, their party is discovered by a huge brontosaurus, which though innocuous, manages to draw the attention of several ferocious allosauri. One allosaurus attacks the brontosaurus while others attack the Vikings who are caught off guard. The giant carnivores kill a number of the men, plus some of the eagles which are tethered and unable to escape. Jimmy and several others mount their eagles and begin an aerial attack on the allosauri, with the eagles' talons and their own spears and arrows as weapons.

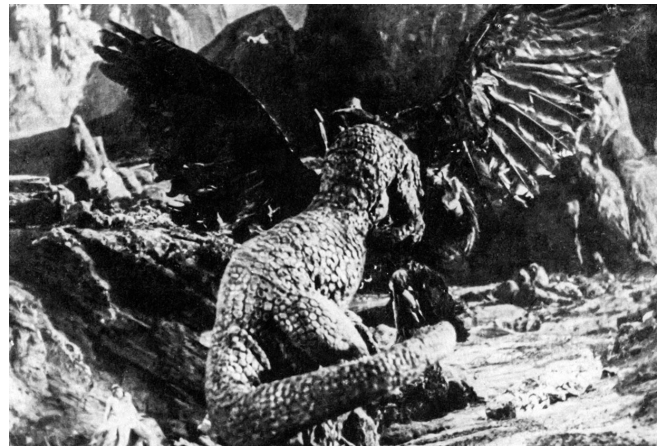
Eventually, the grounded Vikings still remaining are rescued and all return to the plateau. Shortly afterward, Jimmy manages to repair his radio which had been damaged in the plane crash. Over it, they hear that the United States is under threat of imminent war with an unnamed — but obviously Teutonic — world power which has a devastating weapon capable of neutralizing all electrical power. The Vikings rally behind the two Americans and, mounted on their war Eagles, fly south to the United States where they engage and defeat the enemy's aerial armada in a tremendous battle over New York City.

Three versions of the script were prepared by Cyril Hume, all very similar except that the adventures in the Valley of the Ancients were expanded in each successive treatment. In the later versions, the *war eagles* and their riders were to engage in aerial combat with a swarm of giant pterodactyls. Other land creatures, such as triceratops, were also added. In a further sequence, Jimmy and Naru, escaping on foot from an allosaurus, were to find temporary refuge in a cavern, only to be hounded by other prehistoric beasts and beast-men inside.

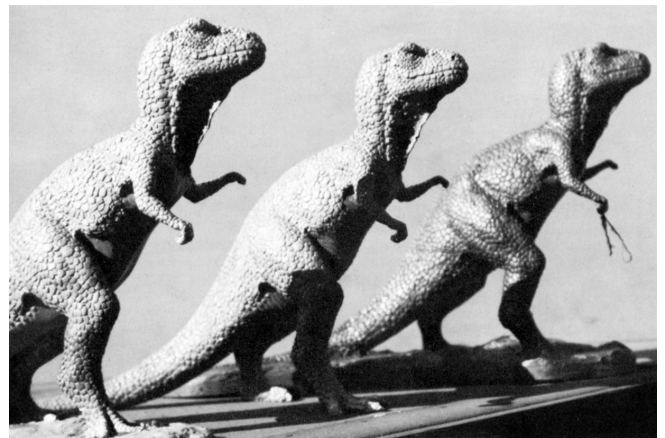
Considerable preproduction work was done on *War Eagles*. Marcel Delgado made his usual fine models of several eagles and allosauri; and early in 1939, a 400-foot animated test sequence was shot utilizing them. The footage was for the Valley of the Ancients sequence and it depicted the retaliatory attack on the allosauri in which the eagle-mounted Vikings make several passes at the beasts and then dismount for the final kill. For O'Brien, the animation was even more painstaking than usual since the *war eagles* had to be manipulated on invisible, but sturdy wires.

In September 1939, Hitler and his storm troopers marched into Poland, bringing about the beginning of *World War II* — and the end of *War Eagles*. Merian C. Cooper reenlisted in the Army Air Corps and *War Eagles* slipped quietly into limbo. Cooper remained on active duty for the remainder of the war — at which point *War Eagles*, by virtue of its theme which played upon the tensions of impending world hostilities, was then pitifully dated.

In the lean months following the abandonment of *War Eagles*, John Speaks stepped into O'Brien's life once again. Speaks, who had formed his own independent company, Colonial Pictures, was interested in a possible collaboration, and together the two worked up a proposal which they



An eagle-mounted Viking engages in close combat with one of the marauding allosauri. Only the limited test footage was shot. War Eagles would ultimately be abandoned before the start of principal photography.



O'Brien's next project — Gwangi — was to share a similar fate. For this unrealized production, Marcel Delgado crafted one of his finest puppets — flanked in this photo by its clay prototype on the right and a plaster casting on the left. Gwangi was to have concerned the discovery of prehistoric life in a remote corner of the Grand Canyon.

submitted to RKO. The studio responded to the idea, and in May 1941, entered into an agreement with Colonial Pictures to finance the independent production of *Gwangi* — with John Speaks and Willis O'Brien acting jointly as co-producers. Harold Lamb and Emily Barrye were assigned to develop the script, and over the next five months produced a treatment and two draft screenplays.

The setting for *Gwangi* was to be a remote corner of the Grand Canyon where the discovery of a herd of miniature horses only two feet tall leads a group of cowboys from a traveling wild west show to try and capture one of the little creatures to put on display. They track the horses to a hidden valley where they also find numerous prehistoric reptiles. The cowboys encounter a pterodactyl which swoops one of their number from his horse, and in rescuing him they attract the attention of the legendary *Gwangi* — a huge allosaurus which they lure into a pit but are unable to keep there. The expert rodeo riders attempt to rope the ferocious beast, but are interrupted by the arrival of a triceratops. *Gwangi* defeats the armored reptile, but is trapped in a landslide as it tries to catch the horsemen. The cowboys chain the beast to a cart and transport it back to the circus grounds. However, as the show progresses, the lions escape and attack the allosaurus which manages to break free and devastate the town before being forced over a cliff by a truck.

Preproduction commenced at the old Pathe Studios in Culver City; and once again, OBie developed many ideas and made hundreds of sketches and a few oil paintings. Marcel Delgado, meanwhile, designed the armature and built a prototype model of the allosaurus featured in the script. He also produced just the head of the triceratops. Anne Shirley, James Craig and Edgar Kennedy were signed for the lead roles; and considerable time and energy was expended in the area of art direction. In all, slightly more than \$50,000 went into the preproduction effort. But as with OBie's previous project, *Gwangi* never progressed past the development phase — this time due to a shake-up in the studio executive structure. The original agreement with RKO had stipulated that if the studio declined to proceed with the film, Colonial Pictures could pick up all option rights. Though these rights — which included the screenplay, all artwork, photographic equipment and miniatures — were made available to Colonial for only \$30,000, Speaks and O'Brien were unable to find alternate financing within the specified time frame, and so *Gwangi* was officially terminated.

Willis and Darlyne O'Brien moved to Chicago in May 1942, where OBie worked until November of the following year supervising miniature photography of ships and planes for a series of classified films produced for the United States war effort at the Wilding Studios on Argyle Street. Darlyne, meanwhile, was employed at the same facility, inking cels in the animation department.

When the O'Briens returned to Hollywood, hard times set in. No one seemed interested in the kind of work OBie did best. On his own, OBie tried to get a number of animation projects underway, including a comedy he was attempting to develop with screenwriter Jerry Cady that would have shipwrecked the Marx Brothers on a prehistoric island — but this, and other attempts at merchandising his singular talents proved fruitless. Out of economic necessity, he even began accepting conventional matte painting assignments, producing artwork on glass for such productions as *The Miracle of the Bells*, *The Bells of St. Mary's* and *Going My Way*. At one point, during a studio artists strike, his financial situation became so arduous that he found himself pressed into doing a number of matte paintings at home, which Darlyne then loaded in her car and smuggled past the picket lines at RKO's main gate.

Shortly after the war, Merian C. Cooper and Ernest B. Schoedsack rejoined, and together with director John Ford, began preliminary plans to film *Mr. Joseph Young of Africa* for Argosy Pictures, a company established by Cooper and Ford in 1937 when disputes arose with Selznick International over the making of *Stagecoach*.

Mr. Joseph Young of Africa concerned the story of a ten-foot-tall gorilla, named Joe, who is raised from infancy and trained by a young girl, Jill Young (Terry Moore). Max O'Hara (Robert Armstrong), a publicity-minded theatrical agent, organizes a party of cowboys headed by Greg Johnson (Ben Johnson) to rope wild animals in Africa for use in the Golden Safari, a nightclub he is planning with an African motif. When he comes across Joe, O'Hara induces Jill to bring her pet to Hollywood to appear in the club. Joe is teased and humiliated by the nightclub patrons, and after he is goaded into a destructive rampage, the authorities decide that he must be put to death. O'Hara and Jill manage to free Joe, and are trucking him to a ship that will carry them safely back to Africa when they pass a burning orphanage. They stop to help, and Joe redeems himself by risking his life to rescue a small child trapped on the roof of the blazing building. Shortly before release, the title was changed to *The Great Joe Young*, and then finally to *Mighty Joe Young*.

As with the other Cooper-Schoedsack productions, Willis O'Brien and his crew were engaged to handle the complex special effects work, and once again there were clashes between producers and technicians. During the nightclub sequence, OBie wanted to have another ferocious gorilla escape from its attendants in the cellar and come up on stage where Jill Young is performing. Her screams were to have reached Joe, who was then to have broken out of his cage and engaged in a destructive battle with the other gorilla. However, Cooper did not like the idea, and so Joe was instead given liquor by three inebriates and then goes on a drunken rampage, destroying the entire club.

Meanwhile, Marcel Delgado was having his own share of problems. Production called for six full models of Joe, four of which were fifteen inches tall, while the other two, for longer shots, were ten and five inches. Delgado built a finished model of Joe and took it before the studio production supervisors for approval. When they began objecting to the size of its feet and its stoutness, it became readily apparent to Delgado that they knew very little about anthropoid anatomy; but he went back and made the alterations they desired. His second attempt was also rejected for similar reasons. Finally, after the fourth remodeling of the gorilla, Delgado again presented it to the supervisors and told them they could either accept it or find someone else to do the work.

OBie had designed the armatures for *King Kong* and *Son of Kong*, but Delgado designed the ones for *Mighty Joe Young* himself. Each of the six armatures, which consisted of about a hundred and fifty moving pieces — sixty in the hands along — were machined from milled dural at the cost of about twelve hundred dollars apiece. Joe's teeth were metal covered with enamel, and his eyes were doll's eyes. In addition to the six complete puppets, Delgado also constructed a larger-scale version of Joe — also about fifteen inches tall, but from the waist up. This half-puppet was attached to a board on a swivel mount, and was intended for use in closeup shots since the decision had been made not to build any full-scale mechanical props. Curiously, however, Delgado achieved such intricate detail on the smallest of the six fully-rendered models that it was used for most of the facial closeups.



O'Brien worked out all the Gwangi animation sequences and personally prepared a battery of storyboard sketches. Though the original concept was never filmed, many of his sequences were to survive virtually intact when producer Charles H. Schneer purchased the screen rights some twenty-five years later and resurrected the project as *The Valley of Gwangi*. Special effects for the later production were accomplished by O'Brien's protege, Ray Harryhausen.



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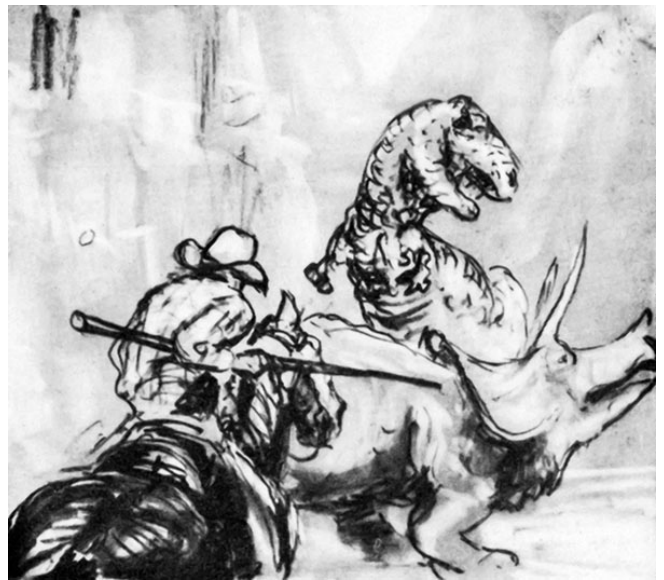
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The most significant difference between the Kong and Joe puppets was in the fur. The rabbit pelts which had been used to cover Kong impressed easily when handled, resulting in an undesirable rippling effect in many scenes. Although some observers marveled at the random fur movement — attributing it to Kong bristling in anger — O'Brien was less than pleased with the effect. So for *Mighty Joe Young* he decided to engage a professional taxidermist to devise a more satisfactory covering for the ape models. O'Brien had first been made aware of the value of taxidermy during *War Eagles* when Marcel Delgado experienced tremendous difficulty in trying to glue real feathers onto his miniature eagles. George Lofgren, a taxidermist on staff at M-G-M, was brought in to solve the problem, which he did by providing treated birdskins with the original feathers still attached. O'Brien turned to Lofgren once again for *Mighty Joe Young*.

Over the years, Lofgren had devised and perfected a unique means of rubberizing animal fur — a process he first employed extensively in making countless fake horses for actors to ride in front of rear process screens. Using his patented technique, Lofgren could embed any type of animal fur in a flexible latex rubber skin which could be worked with very easily. Unborn calf hide was selected for the Joe Young puppets because it resisted impression and, due to the minute size of the hairs, looked very realistic when enlarged on film. To begin with, the Lofgren process called for non-tanned hide from a freshly slaughtered animal. The fur would be carefully combed out so it would lie properly and then covered over with a thick coating of wallpaper paste or some other water soluble adhesive. Thus treated, the hide would be placed in a sealed vat filled with dermestes beetles. In its larval stage, particularly, the dermestes is a voracious scavenger that will eat nearly any dried animal material. As a result, within a short period of time, the exposed skin would be completely eaten away, leaving the unpalatable glue and hair behind. Without the skin, the hair roots would be exposed and over these could be brushed several layers of liquid latex, dyed brown or black. The final step was then to dissolve out the glue, leaving the original fur implanted by the roots in a rubber skin that was both durable and easily affixed to the animation puppets.

In addition to his ape puppets, Marcel Delgado also fashioned some miniature lions for the nightclub rampage and some miniature humans, as well. It was also necessary to make four miniature horses to be photographically combined with the live horses in the African scenes where Joe is roped by the cowboys. O'Brien commissioned a studio sculptor of long standing to make a clay model horse from which Delgado could work. Meanwhile Delgado went about making the other models for the film. When he had finished, the sculptor had still not completed the horse and it had

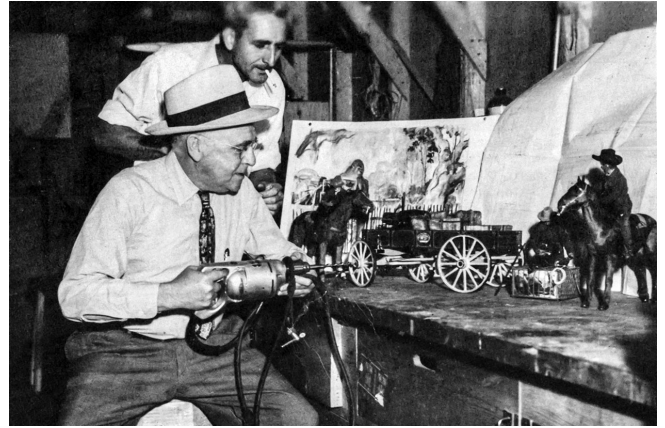


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already been two months. Delgado then designed the armature himself and built the horses on his own. OBie was delighted with them.

An old silent film stage on the RKO-Pathe lot, which had been relegated to studio warehouse status shortly after Cecil B. DeMille completed shooting *King of Kings* on it in 1926 was cleared out and transformed into a workshop and production facility for O'Brien and his effects crew. Where necessary, new equipment was designed and constructed — including five stop-motion projectors built to OBie's specifications by Harry Cunningham — but for the most part, the basic techniques had changed relatively little over the years. All was not the same, however. During the period between 1933 and *World War II*, the motion picture trade unions had greatly increased their grip on the industry, and as a result of the inevitable featherbedding that followed, OBie was forced to maintain a crew of about twenty-five men to do the work which had been handled more easily and efficiently by six on *King Kong*. The larger crew also hampered Delgado's work, because whenever someone felt like quitting early, an arm or a leg on one of the critical models would conveniently be broken, necessitating a halt in filming until it could be taken apart and repaired.

Because of the complexity of the special effects work on *Mighty Joe Young*, OBie was kept busy devising ways of obtaining the particular effect desired for each scene. As a result, he did not have much time to work on the actual animation itself. For his chief animator, OBie chose a young man named Ray Harryhausen. Harryhausen, a great admirer of OBie's work, had begun his own model-making and stop-motion animation while in high school. During the preproduction on *War Eagles*, Harryhausen worked up his courage and contacted O'Brien about a possible visit to the studio. OBie condescended to see the young man, put him quickly at ease, and before the meeting was over, offered some useful criticism of the models Harryhausen had brought along. In the interim between *War Eagles* and *Mighty Joe Young*, Harryhausen had continued to hone his talents, completing a number of 16mm projects which, in 1940, ultimately served to win him his first professional animation job. Working at George Pal's small studio in Hollywood, Harryhausen spent the next two years grinding out footage for the seemingly ever-popular Puppetoon series then in production for Paramount. While there, he even had occasion to work side-by-side for a few weeks with his idol — an exhilarating time for Harryhausen, but a particularly frustrating one for the financially desperate O'Brien who found himself reduced to mechanically changing heads and legs on Pal's wooden replacement puppets. After a tour in the Army, Harryhausen returned to his first love, producing on his own a number of animated fairy tales which were picked up and distributed nontheatrically. Over the years, he continued to show samples of his finished work to O'Brien, hoping always for the opportunity of doing something on a truly grand scale. His perserverance would finally pay off. When the time came to select an assistant for *Mighty Joe Young*, OBie saw to it that Harryhausen got the job.



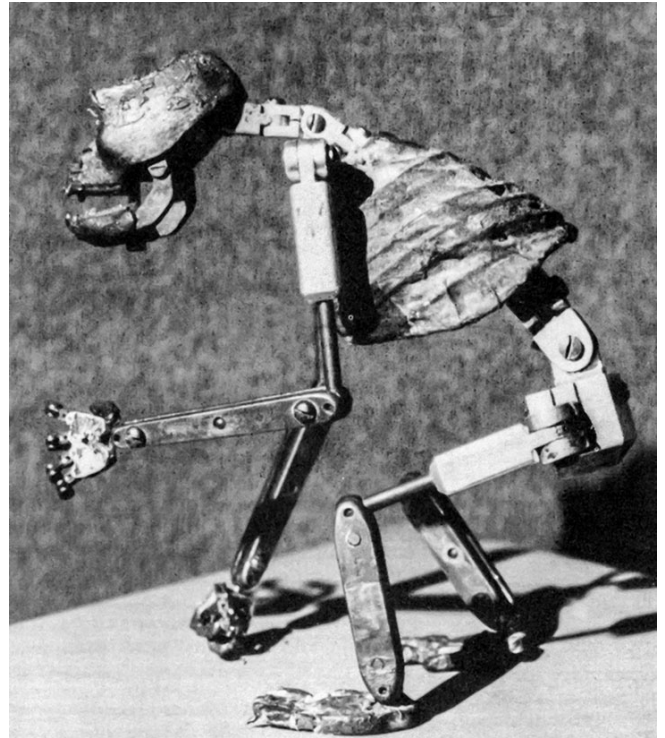
O'Brien clowns for the camera as taxidermist George Lofgren watches intently. Miniature horses, riders and wagons were constructed for Mighty Joe Young, O'Brien's last major production.



The animation setup for Joe's entrance into the jungle compound. The front face of the wagon contains a rear process screen onto which the caged lion would be projected. Behind the foreground miniatures is a painted glass background. The darkened area in the center is for rear projection so the live lion could be made to run across the clearing when Joe smashes the cage. In this sequence, unintended reflections from the foreground miniatures can be seen on the background glass.

Beginning with the basement sequence in which Joe gets intoxicated, and proceeding then to Joe's entrance into the jungle camp, Harryhausen accomplished about eighty percent of the finished animation in *Mighty Joe Young*. Pete Peterson, another of OBie's proteges, did most of the remaining scenes. Peterson, a victim of multiple sclerosis, was limited in the work he could do, but his diligent self-application to animation resulted in some excellent footage, including the amusing sequence of Joe taunting his pursuers from the back of a truck. OBie had time to animate only a handful of scenes himself, including several shots of the nightclub rampage, and two or three of the scenes in which Joe is roped by the cowboys.

The nightclub rampage involved some of the more complex effects in the film, with both miniature and full-size settings and paintings, as well as intricate intercutting of the animated ape with live and animated lions. In order to achieve one sequence in which Joe grabs a lion by the tail and flings it across the dance floor, a complete duplicate of the nightclub set was built, with the floor sloped at a twenty-degree angle, at Billy Richard's World Jungle Compound in nearby Thousand Oaks. After shooting the patrons' hasty departure from the club, the studio set was photographed in detail and recreated exactly on the Jungle Compound reproduction. Care was taken to insure that overturned tables, wraps on backs of chairs, and even glasses and ashtrays were placed in identical spots. The scene of Joe throwing the lion was filmed in miniature, but to get the shot of the live lion hitting the floor and crashing through the furnishings, a chute was constructed on a rocker arm which was to project the lion out onto the sloped floor. When all was in readiness, the lion was placed in the chute, but it refused to proceed past the device's center of gravity. Wild animal trainer Mel Koontz, who for years had doubled in animal scenes for just about every performer in Hollywood, crawled out to coax the beast along. Suddenly the rocker arm tipped and both Koontz and the lion



One of the four fifteen-inch Joe Young armatures designed by Marcel Delgado. In all, six full models were constructed, plus a larger-scale half-puppet intended for closeups.



Joe's movements were perfectly timed to interact effectively with the live-action lion footage projected into the cage.

spilled out of the chute, crashing through the carefully positioned breakaway furniture. It took hours of repairing the set before they could reshoot the scene.

The most difficult scene of the film was that in which Joe, balancing a platform holding a piano and Jill Young, revolves around the nightclub stage while she plays “Beautiful Dreamer.” The scene required identical timed movement of the animated and live subjects, and dozens of tests were made before the proper effect was achieved.

For the film’s climax, the orphanage, a plaster model about five feet tall, was set on fire and filmed at high speed to increase the illusion of mass. An electric vibrator concealed in its base was employed to facilitate the disintegration in a manner not unlike that used to topple the Temple of Jupiter for *The Last Days of Pompeii*. This footage, along with associated live-action material, was then projected into one of OBie’s animation setups. Additional smoke and flame elements were superimposed or optically matted into the finished shots by Linwood Dunn and his photographic effects staff. Opticals, in general, were to play a more significant role in *Mighty Joe Young* than they had in either of the *Kong* pictures — due in large part to the development of the advanced Acme-Dunn optical printer and the fact that time limitations precluded all the composites being accomplished with OBie’s miniature rear projection system.

The special effects for *Mighty Joe Young* were completed in fourteen months and then intercut with the live-action footage directed by Ernest B. Schoedsack — his only directorial effort after a *World War II* incident in which his eyes were severely damaged by cold when he dropped his face mask during a high altitude test of photographic equipment for the *Air Force*.

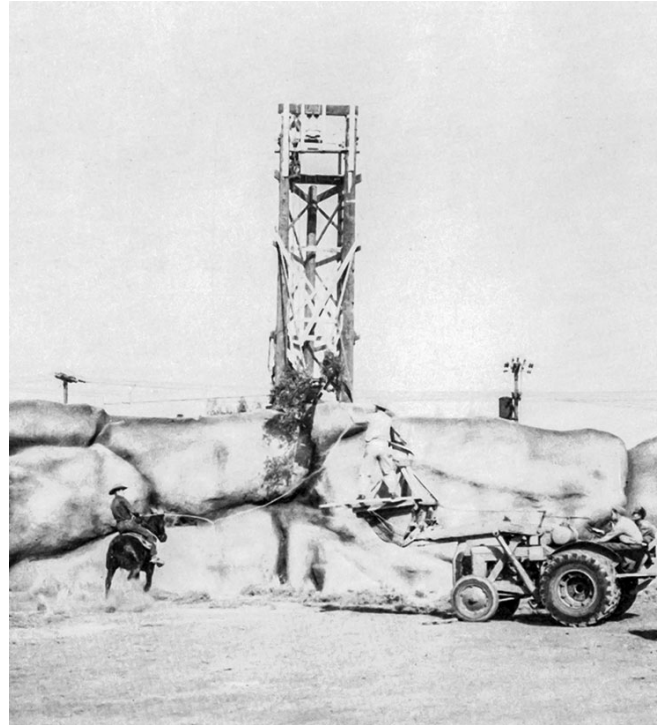
Shortly after *Mighty Joe Young*’s release in 1949, Merian C. Cooper and Sol Lesser announced that they were preparing to film a sequel, *Joe Meets Tarzan*, starring Lex Barker. Leland Laurence was commissioned to develop a script for the film, but it never progressed beyond this stage, presumably because the producers soon realized that *Mighty Joe Young* was going to be a financial failure. Though it received better-than-average box-office returns for a picture of its type, the huge production cost brought about by the unions and studio overhead drove it into a financial bracket where, even by a fairly complete saturation of its intended market, it was impossible to recoup its \$2.5 million investment.

Though Willis O’Brien would never realize a cent from his one-and-a-half percent share of the picture’s net profits, he was compensated nonetheless with a gold statuette presented to him by actress Patricia Neal on the evening of March 23, 1950. Stepping into the public limelight for the first time, OBie proudly accepted an Oscar from the Academy of Motion Picture Arts and Sciences for Best Special Effects on *Mighty Joe Young*.

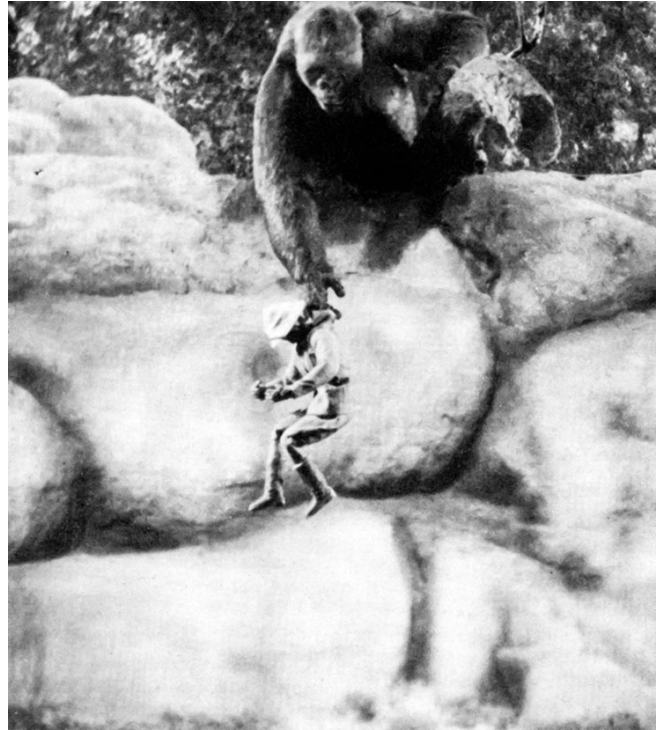
Even before the Academy Awards ceremony, however, OBie was again at work on a new project, *Valley of the Mist*, for Jesse L. Lasky. The film was to be based on an original treatment written in 1944 by Willis and Darlyne O’Brien under the title *Emilio and Gulo*, which they later expanded and retitled *El Toro Estrella*.

In the original version, Emilio, a twelve-year-old boy who lives with his family in the hills of Mexico, is given a bull calf he names Gulo and raises as a pet. Emilio makes friends with some local Indians, often riding Gulo to their village where he hears tales of a giant lizard which inhabits the

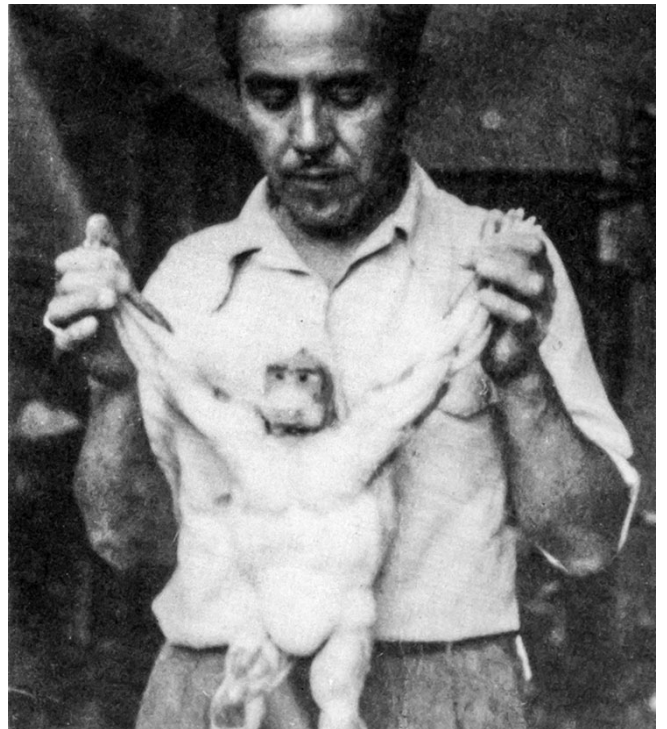
area. One day a man named Garzon, a dealer in bulls for the ring, learns of Gulozo and induces Emilio's father to sell him. Heartbroken, Emilio extracts a promise from the skeptical Garzon to exchange Gulozo, plus one thousand pesos, for the giant lizard if he can capture it. Emilio solicits the aid of his Indian friends and, using cattle as bait, they succeed in luring the lizard into a portable trap. On the way back to town where the bullfight is to be held, the lizard escapes and breaks into the ring through the bullpens. Several of the bulls are killed by the savage beast before Emilio frees Gulozo. Gulozo manages to kill the lizard, but is mortally wounded himself and dies in Emilio's arms.



Live-action scenes of Max O' Hara being plucked from his horse were filmed against a wall of plaster rocks. A large crane was erected on top with a pendulum arm that attached to a harness being worn by Robert Armstrong's stunt double. For the roping scenes, cowboys tossed their lariats around an elevated platform mounted on a bulldozer.



Joe dangles O'Hara by the scruff of his neck.



Marcel Delgado's unskinned Joe puppet demonstrates the pseudo-muscular build-up technique he perfected over the years.



Ray Harryhausen animates Joe for the roping sequence. Live-action footage of the cowboys was projected onto a rear-screen positioned behind the unpainted area in the background glass.



The cowboys in the rear are live-action, inserted via rear-screen process photography, but the two immediately behind Joe are meticulously crafted stop-motion miniatures. Shots featuring the animated horsemen were among the few personally animated by O'Brien.

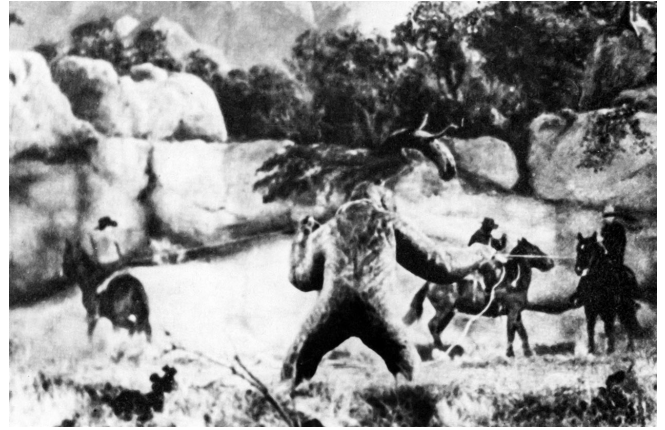
In the second treatment, the bull was renamed Star and the animation portions of the story were greatly expanded. To help Emilio, the Indians take him to a wide fissure in the mountains which leads down into a mist-filled valley inhabited by prehistoric beasts. The party is attacked by a horde of pterodactyls and witness a battle to the death between two allosauri and a triceratops before managing to trap an allosaurus which they bring into town just as the bullfight festivities begin.

Emilio proceeds to Garzon's box, but the wealthy dealer, embarrassed to admit that he knows the poor boy, sends Emilio away. The Indians cut the allosaurus loose and it bursts into the arena, killing

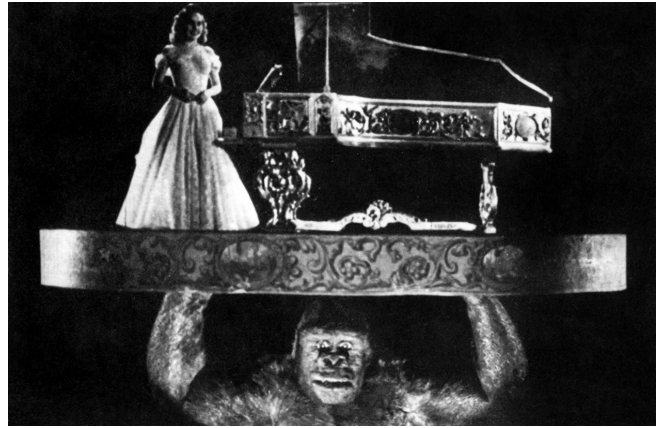
two bulls before confronting Star. The two struggling beasts break out of the arena through the bull stalls and conclude their thunderous battle in the village streets. Star kills the allosaurus, and Emilio and his victorious pet head for home unchallenged.

Lasky and his son, William, made extensive preparations for the production of *Valley of the Mist*. Lasky, who had been one of the founders and the first vice president of Paramount Pictures, made arrangements with that company to release the film. Plans were made to shoot in Technicolor on location in Mexico where a good portion of the cast, including the starring role of Emilio, would be recruited from native talent. O'Brien was to be coordinator of special effects and, as with *Mighty Joe Young*, Ray Harryhausen was to be his assistant and chief animator.

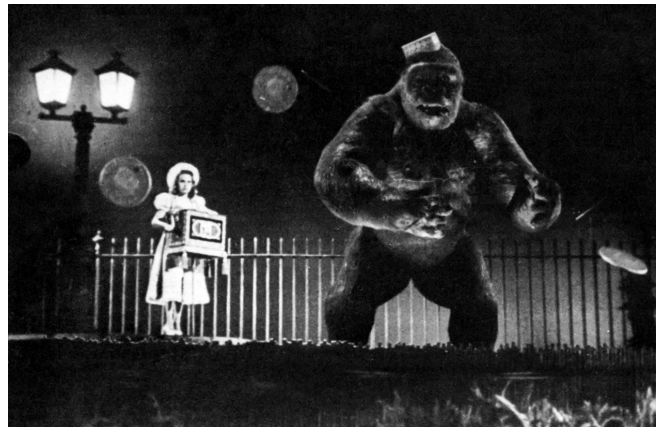
Richard Landau was hired to write the screenplay, but after about a year Lasky was still unable to raise sufficient funds to finance the production. In April 1950, the option for *Valley of the Mist* was sold to Edward and William Nassour, who also engaged OBie for the technical work. The title was changed to *Ring Around Saturn*, the script was rewritten by Paul Rader, and the production was slated for a budget of \$1 million. Like its predecessor, *Ring Around Saturn* soon fell by the wayside; but in 1953, the Nassours decided to resurrect it as an all-animated feature, with both human and animal figures depicted by three-dimensional puppet figures. In keeping with the new form, most of the dinosaur elements were deleted and the story was rewritten into more of a fairy tale vein. Edward Nassour — a longtime devotee of O'Brien and his work — decided to take on the massive animation job himself. Some two years into production, the still incomplete project was finally abandoned, only to be salvaged more than twenty years later when producers Martin B. Cohen and Martin Nossack stepped in with sufficient funds and enthusiasm to complete it. Released on a trial run late in 1975, *Emilio and His Magical Bull* met with gracious response from the critics, but then vanished without a trace.



Roping scenes were accomplished with miniature ropes carefully aligned to the ones being thrown by the real cowboys on the rear-projected plate.



Scenes of Joe balancing the platform with Jill Young and her grand piano were the most difficult in the film, involving precise rotation of the stop-motion puppet to correlate with the already-completed live-action.

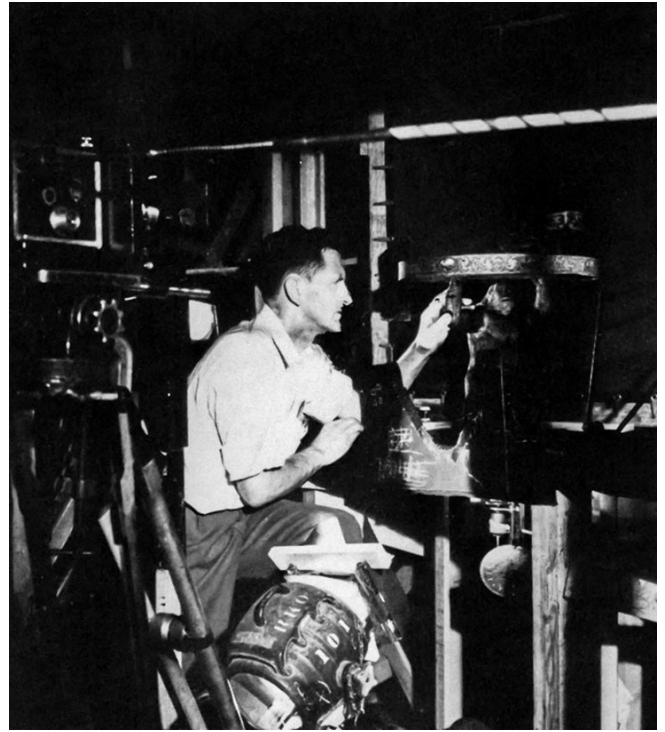


Outfitted like an oversized organ grinder's monkey, Joe is teased and humiliated by the boisterous nightclub patrons.

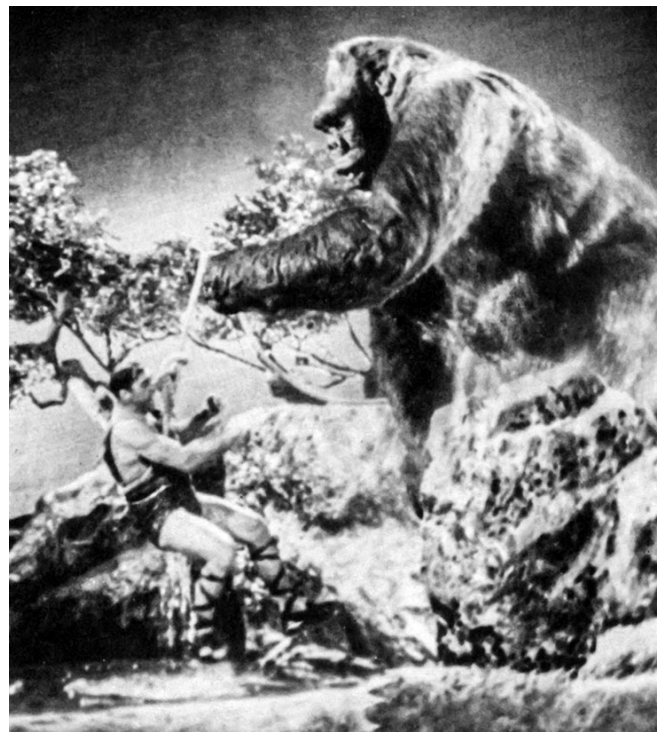
An even more curious footnote to O'Brien's twice-aborted project was to surface in 1956, when RKO released a King Brothers film called *The Brave One* which contained no dinosaur, but was otherwise so similar in plot to the original *Emilio and Gulo* that the Nassours initiated a \$750,000 lawsuit for plagiarism. To further complicate matters, *The Brave One* was awarded an Oscar for Best Original Story before it was discovered that no one besides the producers had ever heard of its supposed author, Robert Rich. The King Brothers' unconvincing explanations led many commentators to speculate correctly that Rich was a pseudonym for Dalton Trumbo, one of several Hollywood writers blacklisted in the early Fifties for alleged Communist proclivities. Confirmation from the producers was not forthcoming, however; and as a result, Trumbo's Oscar went unclaimed for nearly eighteen years until the Academy Finally bowed to common knowledge and presented it to him in 1975, shortly before his death. The plagiarism suit meanwhile, was settled out of court in April 1957.

In 1950, while OBie was still working for Nassour, Merian C. Cooper entertained thoughts of producing *Food of the Gods*, based on the H.G. Wells novel of a substance which makes everything eating it grow to tremendous proportions. In the course of the narrative, chickens, wasps, rats and even humans eat the food. Once again, OBie was to be the chief technician. Cooper developed many concepts and studio artists made numerous illustrations for animation sequences, but the idea was finally abandoned because of scripting difficulties.

In 1952, OBie was again engaged by Cooper for *This Is Cinerama*, the first feature-length film in the new ultra widescreen process. Invented by optics engineer Fred Waller, the Cinerama system made use of peripheral vision to create a three-dimensional effect without the need for special viewing glasses. By using three cameras positioned at 48-degree angles, Cinerama was able to approximate the full normal range of human vision by producing on a mammoth curved screen an image encompassing a field 145 degrees wide by 55



Pete Peterson animates the "Beautiful Dreamer" sequence.



Precise interaction between foreground and background elements was again required for the scenes in which Joe dunks world heavyweight champion Primo Camera.

degrees high. Each camera photographed one third of the total image, and when the films were projected synchronously in like manner, the images blended together almost imperceptibly. Cooper had been brought into the project by globe-trotting journalist Lowell Thomas — and he, in turn, hired O'Brien. OBie contributed a painting meant to represent prehistoric cave drawings, but other than that had little to do with the actual production of the novel film. Cooper, in fact, had placed him on payroll primarily to investigate the possibilities of remaking *King Kong* — then at the height of a very successful reissue — in Cinerama. Considerable progress was made on the proposed project, but the technician who was devising the extremely complex motors for stop-motion photography in the three-camera system died suddenly of a heart attack and the ensuing setback was enough to force abandonment of the idea.

Also in the early Fifties, OBie devised several new concepts in entertainment, none of which ever came into being. He prepared a series of short stories for television called *The Westernettes* to be filmed with children playing the principal parts and using small-scale buildings and Shetland ponies. One of the adventures was to concern a girl who is kidnapped and hidden in an underground cavern, and who is rescued from a thirty-foot lizard by her friends who manage to hoist her out with ropes. In addition to the stories, OBie made a series of detailed continuity sketches, but was unable to interest any producers. He also had an idea to present educational half-hour television shows on individual sports personalities and demonstrate, with slow motion and other camera tricks, the particular characteristics which made that personality excel. He also had plans to adapt slow-motion training films on golf for use in coin-operated machines so that golfers could get last-minute pointers on style before going out to play.

OBie also devised two amusement park ideas for children. In one, the children would enter a tent with a large screen and seat themselves on mechanical horses. The film would show a bandit robbing a bank and riding off. The hero cowboy would swear in the children as deputies and then, riding their mechanical horses, they would follow the bandit and the sheriff and “assist” in the arrest. Later, upon hearing of Walt Disney’s proposed Disneyland amusement park, OBie prepared a series of sketches and plans for a filmed trip to the moon that would be projected in a huge mock-up of a passenger spaceship. A Cinerama-type screen was to be used; and for extra excitement, OBie added a touch of fantasy by having a huge monster, which he dubbed the Lunasaurus, attack the ship after it had landed on the moon’s surface. However, Disney already had a similar project in preparation, and so OBie’s proposal was rejected.

In 1955, OBie wrote a film treatment called *The Beast of Hollow Mountain*, which centered on two feuding cattlemen, Hank Oliver and Jim Larkin. One day, some of Oliver’s men discover that their fences are broken. Mangled and torn remains of several Oliver cows are found on Larkin’s side of the fence — along with Hank Oliver’s mutilated body. Jim Larkin is immediately suspected, and when he is found no one believes his account of seeing a giant lizard carrying off a full-grown cow in its mouth toward Hollow Mountain. Oliver’s men are about to lynch Larkin when Dean Roberts, the local deputy sheriff intercedes. Together with his Indian friend, John Longtooth, Roberts combs the area, and on the third day they discover the giant lizard and follow it to a concealed mountain cavern strewn with bones. With assistance from their other Indian friends, Roberts and Long-tooth lure the lizard into a trap; but as they are transporting it back to town for evidence, the wagon

breaks down and the beast escapes, rampaging through the community before Roberts manages to impale it on a sharpened pole.

OBie took his idea to the Nassour Brothers. Edward Nassour liked it and bought it inexpensively, promising to hire OBie as animator when the time came. However, when production of *The Beast of Hollow Mountain* was announced the following year, OBie was not even permitted past the studio front office. Nassour's screenwriters had altered the original concept almost beyond recognition, and Nassour himself had decided to do the animation effects.

In later attempts to convince the world that he had devised something altogether unique, Edward Nassour met openly with members of the media to discuss the revolutionary new technology he had employed in *The Beast of Hollow Mountain*. After claiming that eighteen years of experimentation and development had gone into the process, he explained Regiscope as an electronic animation system which, in some mysterious manner, fed actuating impulses to the animation figures. "The Regiscope machine," Nassour asserted, "predetermines every movement of an inanimate object to be used in the motion picture and records it on a tape. The 'actor' is then electronically controlled in all of its motions." This apparent precursor of motion control puppet animation was, in fact, nothing of the kind. The only real difference between *The Beast of Hollow Mountain* and earlier stop-motion features was the employment of replacement puppets. This approach, while standard in puppet cartoon work, had never before been put to realistic use in a feature film. Much of the animation, of course, still had to be accomplished with a conventional stop-motion puppet — constructed, in this case, over the original Gwangi armature — but shots of the tyrannosaurus running were sufficiently cyclical that the replacement technique could be employed. After breaking down the running pattern into one-frame increments, sculptor Henry Lion prepared a full series of plaster puppets — each slightly different from the next — so that when they were photographed one at a time in sequence, a fluid running motion was achieved. Unfortunately, the effectiveness of the running scenes made the slipshod conventional stop-motion in the rest of the film look that much the worse by comparison.



Jill urging Joe to push the mired truck free were done entirely with miniatures. Animator Pete Peterson studies the setup.



Another all-miniature shot involved the truck pulling up to the burning orphanage. The orphanage — a five-foot-tall plaster structure designed to crumble on cue — was set on fire and filmed at high speed to enhance the illusion of mass.

O'Brien's next film assignment was on Irwin Allen's production of *The Animal World*, a feature-length wildlife documentary released by Warner Brothers in 1956. Since it was Allen's intent to depict the development and proliferation of animal life on earth, the first section of the film was to consist of a prehistoric drama. OBie was commissioned to work out the animation sequences and design the dinosaur models — which for economy and expedience were cast from foam rubber in the studio craft shop rather than being built up around the armatures as Delgado had always done. Several mechanically operated beasts were also constructed, on a larger scale, to help minimize postproduction time. Ray Harryhausen, who had graduated to head technician on his own with *The Beast from 20,000 Fathoms* and *It Came from Beneath the Sea*, was engaged to do the animation. Since there was no requirement for interaction with live performers — and hence no need for composites — the sequence was designed for straight tabletop animation on a miniature diorama. Shooting with two cameras to provide simultaneous long shots and closeups — and exposing two frames, rather than one, for each puppet move whenever possible — Harryhausen was able to execute the required fifteen minutes of finished animation in only eight weeks. In context with the rest of the film, the dinosaur prologue, which contained numerous battles with prehistoric beasts and climaxed in a volcanic earthquake, was generally hailed as the sole redeeming component of an otherwise uninspired production.

Late the following year, OBie was approached by Frank Melford and Jack Dietz to supervise the special effects for *The Black Scorpion* — yet another variation of the established formula OBie had first used in *The Lost World*. A new volcano emerges in Mexico and from it come dozens of giant scorpions which ravage the countryside. After destroying a train, the giant creatures fight amongst themselves and all but one are killed. The remaining scorpion raises havoc in Mexico City before it is trapped in a bullring and destroyed by a military barrage.

Willis O'Brien had long upheld the view that stop-motion animation was an art form in its own right, and as such had no place in anything but a major film production. As a result, he was somewhat chagrined when the split-screen rear projection system Ray Harryhausen devised to incorporate animated subjects into live-action background plates suddenly placed stop-motion work within the realm of the low-budget filmmaker. Though he and Merian C. Cooper had fought tooth and nail for nearly twenty years, the projects on which they had been associated were worthy ones and O'Brien had always respected Cooper's insistence upon quality at all cost. But the two had faltered in their most ambitious undertaking; and as a result, *Mighty Joe Young* had proved to be the swan song for the grandiose style of animation O'Brien had devised and nurtured over the years. If the father of stop-motion animation was to continue on in the field he had brought into being, he would have to adapt — and adapting, for O'Brien, was to be a cruel and painful process. *The Black Scorpion* was strictly low-budget, exploitation fare — but it was the only offer he had. And O'Brien had no choice but to accept it.

At the time final preparations were being made, Ralph Hammeras was in Mexico filming *The Giant Claw* for Columbia. Hammeras, who had continued on with his special effects work, had an impressive record of nearly a hundred film credits, four Academy Award nominations, and an Oscar in 1954 for his work on Walt Disney's production of *20,000 Leagues Under the Sea*. After conversing with Hammeras, OBie decided it would be best to do all the animation effects in Mexico. He would have to be there anyway to supervise portions of the live-action shooting, and by remaining behind

he figured he could produce the effects for about half of what it would cost to do the same work in Hollywood. So OBie and his small crew moved into the Tepeac Studio in Mexico City where a dressing room for extras was remodeled for his workshop and animating room. Even then, the effects budget was so miniscule that Hammeras pitched in and helped with the miniatures and painted backgrounds gratis — otherwise they could not have afforded to have had them done properly.

Most of the animation was handled by Pete Peterson. The movements of the scorpions were made intentionally frenetic to approximate reality, and the scenes within the volcano in which the protagonists are attacked not only by scorpions, but also by thirty-foot worm-like creatures and crusty spiders, were strikingly effective. For shell construction, casting resins were used on the scorpion models — also on the worm which had sponge rubber around the armature and then cast resin pieces glued on top to suggest an authentic chitinous appearance. The technical work was expected to take about three months, but living and working conditions proved to be so oppressive that they decided to leave Mexico before the animation was completed.

Pete Peterson had an unfinished home in Encino. Construction had been started back during *Mighty Joe Young*, at about the time Peterson had gotten married. However, when his wife of three months died suddenly of a heart attack, Peterson lost enthusiasm for finishing the home and instead moved into a small pre-existing cabin at the rear of his one-acre lot. Since the abandoned house was framed in with adobe brick, but had no interior walls or partitions, it made an excellent bargain basement studio. OBie and Peterson sectioned it off in thirds and hung black curtains to isolate the shooting areas; and it was there that the remaining effects sequences in *The Black Scorpion* were produced.

From an effects point of view, there is little evidence in *The Black Scorpion* to suggest that O'Brien and Peterson were working with the slimmest of shoestring budgets. Unfortunately, the same could not be said of their next foray into low-budget filmmaking. Early in 1958, O'Brien was approached by Eugene Lourie, a poverty row stylist with a background in production design who had made his directing debut on what was also Ray Harryhausen's first solo outing, *The Beast from 20,000 Fathoms*. At one point he was also to have directed *The Black Scorpion*, and had even done some preliminary work with O'Brien and Peterson before departing the production over a falling out with producer Frank Melford. Lourie now had another script in hand that was clearly derivative of his earlier success and which was to be filmed in England with joint Anglo-American financing. *The Giant Behemoth*, another of the "radioactive-monster-on-the-loose" films prevalent at the time, concerned an electrically charged creature called a paleosaurus — a giant quadruped dying of its own radiation in what scientific experts diagnose as a biological chain reaction. On its way up the Thames to fresh water, the behemoth invades London, snapping power lines and crumbling buildings before it is killed by an extra dose of radiation from a minisub's radium-tipped torpedo.

Although it was Lourie's intent to enlist O'Brien as effects supervisor for the entire film, producer David Diamond had doubts that O'Brien and Peterson could handle the assignment with their limited facilities and instead engaged Jack Rabin to administer the overall effects effort. Rabin, whose Studio Film Service specialized in low-budget effects work for television and feature films, would engineer all the opticals and shoot the required tank scenes involving the London docksides.

O'Brien and Peterson would produce the animation on subcontract. Incredibly, the combined effects budget was in the neighborhood of only \$20,000.



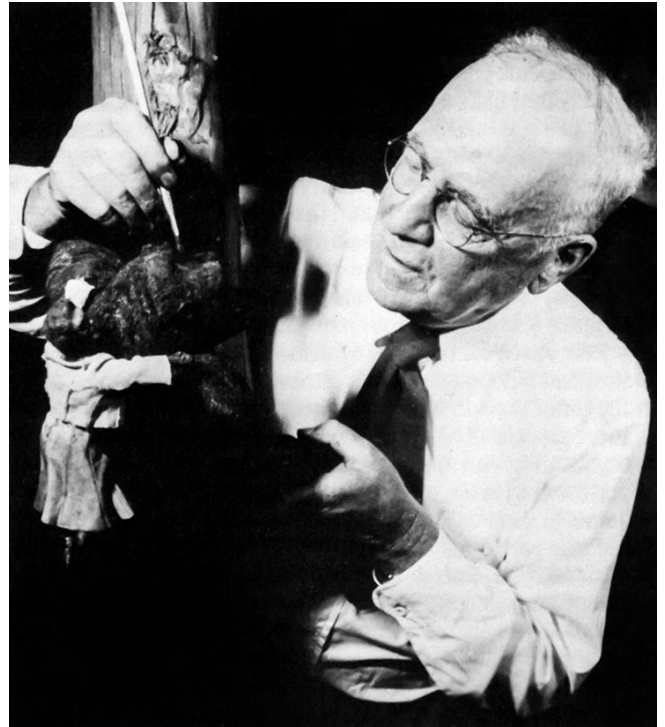
To place Joe on the roof of the burning orphanage, a split was made along the rooftop on the background plate, with Joe positioned behind the front face of the structure, but in front of the smoking chimney.



Joe rescues the last remaining child from the burning rooftop. Both Joe and the child were miniatures, as were the tree and the corner of the building. Background flames were rear-projected. Many of the scenes were enhanced in the optical department with additional smoke and flame.

As with their previous endeavor, OBie supervised Pete Peterson's animation at his home in Encino, and the resulting poor quality was not so much a reflection on their craftsmanship as it was on the incredibly minute budget with which they had to work. Complicating matters was the fact that Peterson's multiple sclerosis had progressed to the point where it was impossible for him to stand erect and painful even to move. For this reason, the animation setups were designed and built about two feet off the floor so that Peterson could animate sitting down. Though a few key shots featured split-screen compositing, for speed and economy most of the others were staged as simply as possible — in front of rear process screens or in miniature street settings fashioned primarily from photo cutouts. On a freelance basis, Phil Kellison — an effects cameraman and model builder at Rabin's facility — produced a few supplementary miniatures to help convey the desired illusions. Kellison also worked with O'Brien on a mechanical prop head that was mounted on a board and operated manually by three independent levers controlling the head, neck and jaw movements. An overzealous stagehand at Rabin's studio incapacitated most of its functions before they could be captured on film; but the head was used nonetheless, bobbing up and down woodenly as the behemoth trod through the streets of London.

The paltry effects budget allowed for only six to eight weeks of bareboned animation — and at that point, more rampage footage was still required. To help pad out the sequence, Rabin took a number of Peterson's completed shots and doctored them in his optical printer. Some were flopped; others were enlarged and reframed. The stopgap measure did indeed provide additional footage with a minimum of further expenditure, but it also resulted in some curious anomalies — most notably involving the same toy car being crushed by the creature's foot three different times.



Touching up the Joe Young puppet.



*Willis O'Brien was presented with an Oscar for his work on *Mighty Joe Young*. Never one to be overly solemn, he outfitted the statuette with a bullfighter's hat and cape and displayed it on his television.*

The Giant Behemoth slipped quietly into obscurity — as did Willis O'Brien. Never again would he have the opportunity to bring his inimitable brand of movie magic to the screen.

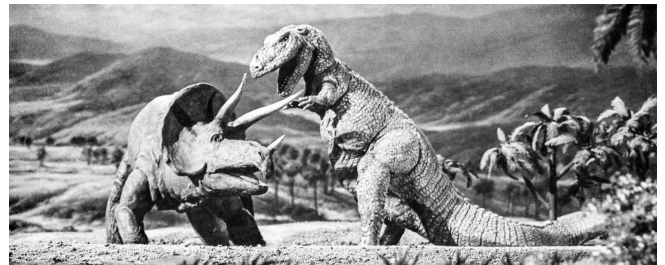
Even though OBie grew less and less involved with animation in the aftermath of *Mighty Joe Young*, he refused to surrender himself to inactivity. Instead, he redoubled his efforts at trying to promote new projects. Countless hours were spent on dozens of story treatments, many of which he dramatized with water color renderings he hoped would interest producers. A few of his stories were purchased, but none ever got off the drawing board.

One of OBie's ideas, called *Triple Assignment*, stemmed from his belief that a majority of motion pictures were too long. He therefore designed a film with three separate, but interrelated, short segments with no padding to slow the pacing. The initial idea centered around *Independent Obverse*, a magazine which would delve into any report, anywhere in the work, which gave promise of something speculative or occult. In the first part, "Assignment Himalayas," reporter Jimmy Banning travels to the Himalayas to investigate reports that a doctor has discovered and befriended a yeti; in the second part, "Assignment Hysteria," reporter Raymond Wyeth investigates a weird case of mass hysteria involving an old Hindu and his mysterious elephant which appears to shrink to the size of a dog and then expand to fill an entire tent; in the third part, "Assignment Baja California," reporter Andy Austin investigates sightings of large amoebic bubbles of living plasma which rise from the depths of the sea to engulf human and marine life. When it appeared that OBie would be unable to sell his *Triple Assignment* concept, he rewrote "Assignment Himalayas" as *A Tale of a Yeti*, and "Assignment Baja California" as *The Bubbles*, but was unable to generate interest in these feature versions, either.

Numerous other film ideas were also developed during this period. *The Eagle* concerned a rancher, Andy Daley, who nurses a wounded eagle back to life and makes a pet of it. When local livestock begins to be found horribly mangled and only partially eaten, the eagle is blamed. Daley, however, discovers the real killer, a giant prehistoric lizard which the eagle manages to kill. OBie also wrote *Umbah*, about an aged Indian chief who, many years before, had tortured a traveling scientist until he revealed his method of making animals larger. The chief subsequently gives the growth compound to his two infant sons, Umbah and Tavotz, hoping they will thus become bigger and stronger than any of the other braves. The plan backfires, however, when they grow to be twenty feet tall. Rejected by the tribe, the chief and his two outcast sons move to a remote valley, where some of the local wildlife also consume the growth compound. Tavotz, a vicious giant who hates his father for making him an outcast goes off to live by himself; Umbah, a near-idiot, stays behind with his father. A young couple, Harry Barbee and Maureen Gayle, befriend Umbah, and the lumbering, good-natured giant protects them from Tavotz and the supersized beasts of the valley, including a giant gila monster. OBie also experimented with comedy in *Matilda*, a story about two men who, after an unsuccessful attempt at installing pigs under sinks for garbage disposal units, find themselves stranded on a remote prehistoric island inhabited by a race of women. They are wine and dine, and are thoroughly enjoying themselves until they learn that the reason there are no men on the island is because the queen marries them all and then kills them off a short while later when she tires of their charms. The two men decide not to wait around for the queen's displeasure,

so they rig up a howdah for a friendly brontosaurus named *Matilda*, and swim her back to civilization.

OBie sold four concepts to the Nassour Brothers in the middle Fifties, but none was ever filmed. *Last of the Labrynthodons* was a story about mythological sea monsters which attack current-day shipping. The idea came to OBie from a recorded dream of Alexander the Great in which the conqueror went down in the ocean and saw huge sea monsters, one of which was so large that it took three days just to swim past. *Below the Bottom* was an idea suggested by Darlyne about giant worms at the center of the earth which wrap people in cocoons. OBie thought it was so funny that he decided to write it up for laughs, and Nassour bought it. In *The Vines of Ceres*, an unmanned experimental rocket goes to the vine-covered planet Ceres. When it lands, a door in the bottom of the capsule opens to permit a camera to photograph the terrain while a vacuum attachment sucks up soil samples for analysis. One of the little hominid creatures which inhabit the planet crawls into the opening, but dies on the way back to earth. The soil from Ceres contains many seeds which grow into vines that reproduce wildly on earth, threatening to collapse the Golden Gate Bridge before it is discovered that the small leatherlike pouch found around the neck of the little alien contains a powerful substance that kills the rampant vegetation. OBie also sold a western to Nassour called *The Devil's Slide*, about a widow and her circus friends who win an ore-hauling contract by using elephants instead of mules.



An allosaurus and a triceratops do battle in *The Animal World*. O'Brien was hired to design and orchestrate the prehistoric prologue, and Ray Harryhausen was engaged for the actual animation. To save time and money, the miniature dinosaurs employed in the sequence were cast in foam rubber rather than being built up directly over the armatures.

The Last of the Oso Si-papu was one of OBie's most ambitious projects during this period. The Oso Si-papu, a colossal reptile with the body of a grizzly bear and the head and coloration of a gila monster, is a creature which, like the locust, appears only once in many years. Two of the massive beasts are discovered near a small southwestern town, and a pair of scientists vie with a producer of low-grade monster movies to capture one of them. The beasts have a savage battle in which one of them is killed. The scientists manage to shoot the survivor with tranquilizer guns, but their party is hijacked by the producer and his henchmen. During the scuffle, the beast revives and escapes. The Oso Si-papu comes upon a vast oil field and is frustrated when it tries to attack the unresponding derricks. It finally chases the film producer and his men to a canyon; and when they try to escape on an aerial tram, the beast shakes them to their deaths. The scientists come upon the scene and again shoot the Oso Si-papu with the tranquilizer guns; but the drugged beast stumbles and falls into the canyon, thus ruining their hopes of examining one of the mysterious creatures alive. OBie put a great deal of work into *The Last of the Oso Si-papu*, including the preparation of a technical supplement and over ninety watercolor continuity sketches, but was unable to interest anyone in producing the film — perhaps, he speculated, because the story's film producer was such a despicable blackguard.

Another major effort was *Baboon*, a further elaboration of his yeti theme. When anthropologist Edward Towne fails to return from a trek into the Himalayas, his daughter presents a roll of exposed film he has taken to two circus promoters. The film, which includes glimpses of a ten-foot yeti, is sufficient to entice the pair to mount their own expedition. Towne, who has managed to win the confidence of the yeti, is found alive and well. Numerous adventures follow, including a battle between the yeti and a giant cobra and the discovery of a lost city with a vast treasure trove. Finally, over Towne's objections, the yeti is captured and loaded onto a steamer bound for civilization. En route, the beast breaks loose from its bonds and wreaks havoc on the ship before jumping into the water and sacrificing itself to save Towne from a school of marauding killer whales. In a foreword to prospective producers, OBie noted that while *King Kong* had had eighteen action sequences and *Mighty Joe Young* had twelve, *Baboon*



A baby dinosaur hatches from its egg.



Producer Irwin Allen and O'Brien examine a completed portion of the triceratops armature.

had been constructed with an unprecedented nineteen. Only slightly tongue-in-cheek, he added that since all his imitators had fancy names for their stop-motion processes, they might want to consider calling his Origimation.

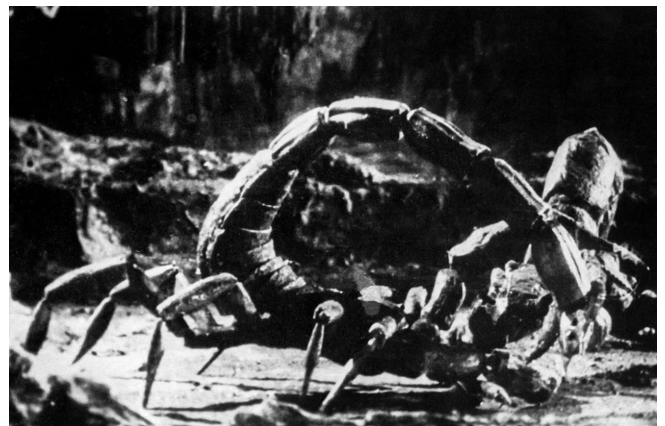
OBie also had some peripheral involvement in two projects Pete Peterson was trying to launch on his own. One, *The Las Vegas Monster*, concerned a baboon which is rocketed into space, only to return via a crash landing in the desert outside Las Vegas. Something in its journey has altered the primate's genetic structure, and for reasons unknown it mutates to gigantic proportions, sprouting two trunk-like protuberances in the process. Peterson went so far as to build the puppet, and using one of the desert settings left over from *The Black Scorpion*, shot a test sequence in which the misshapen beast approaches a remote cabin and then plucks a fleeing man from his truck and flings him to the ground. Peterson shot an even more elaborate test — in color — for *The Beetle Men*, an original story which revolved around his dubious premise that human beings would never be able to withstand the accelerative stresses of space travel. A scientist's attempts to create a protective insect-like exoskeleton for human astronauts, of course, backfires — hence, the beetle men of the title. Ten of the rather comical-looking beetle men figures were constructed entirely from cast resin, and in one tour de force test shot, Peterson had all of them scrambling over a ridge toward camera and then moving out of frame. Despite the effort expended in their behalf, neither project ever reached fruition.

Pete Peterson's days were sadly numbered. Though he had long repudiated the debilitating effects of one killer affliction, he was unable to ignore the consequences of another. Ironically, after bearing the burden of multiple sclerosis for more than a decade, he succumbed to kidney cancer in 1961.

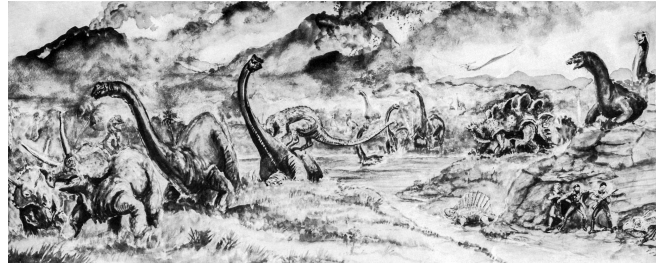
In 1960, OBie prepared a series of sketches for Merian C. Cooper on a story called *The Elephant Rustlers*, about a cattleman who goes to India so that he and his gang can steal trained elephants from plantations to sell to zoos and circuses. OBie's animation was to play an important part, for while the elephant rustlers are herding their stolen merchandise through the dense jungles and untracked swamplands, they are attacked by giant Komodo-like lizards.

Also in 1960, OBie was hired as technical advisor for Irwin Allen's updated color remake of *The Lost World* for 20th Century-Fox. In the new version, Professor Challenger and his party were not engaged in a rescue attempt, but were instead looking for diamonds. They reach the hidden plateau in a helicopter which is later knocked over the edge by a huge reptile; and at the end, they bring a newly-hatched baby dinosaur back to civilization to prove their discovery of prehistoric life.

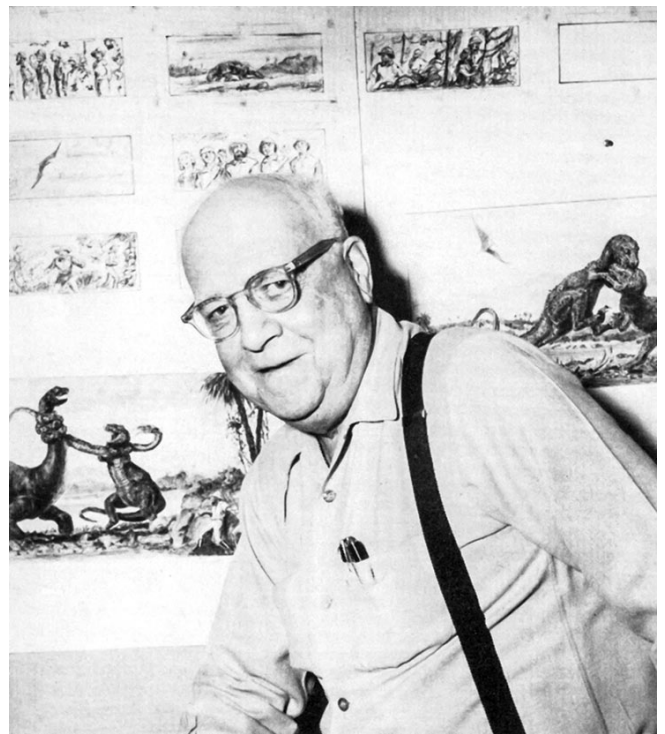
OBie was very pleased at the prospect of remaking *The Lost World*, but he soon found that he had been engaged more for the publicity value of his name than anything else and that he had virtually no voice in any of the production decisions. Most notably, he was distressed that his attempts to convince the producers to make the film with animated dinosaurs had met with total failure. Allen, who had chafed under even the accelerated animation pace of *The Animal World*, was adamant



The *El Niño* of 1997-1998 is probably the strongest *El Niño* in the past 50 years, and it is likely that the 1997-1998 *El Niño* is the strongest *El Niño* in the past 100 years. The 1997-1998 *El Niño* is the strongest *El Niño* in the past 100 years, and it is likely that the 1997-1998 *El Niño* is the strongest *El Niño* in the past 100 years.



*O'Brien was delighted when Irwin Allen hired him as effects supervisor for the color remake of *The Lost World*. His pleasure was short-lived, though, when he found that it was planned to use live iguanas and alligators rather than animated dinosaurs. O'Brien prepared numerous drawings and paintings in an attempt to dissuade the producer, but his efforts were to no avail.*



*O'Brien and some of his sketches for an animated remake of *The Lost World*.*

Live-action gags for the sequence were designed by physical effects expert Danny Lee and photographed using stunt doubles on the Universal lot. These scenes were then to be enhanced and augmented with matte paintings and miniature work at Film Effects of Hollywood. Linwood Dunn had been one of the original founders of Film Effects in 1946, and though he had elected at the time to remain on as head of the RKO optical department, he later turned his full attentions to the independent effects house when the dying studio closed its doors in 1957.

When *Mad, Mad World* arose, it soon became apparent that one of the more feasible ways of accomplishing some of the really complex aspects of the ladder action would be to use stop-motion

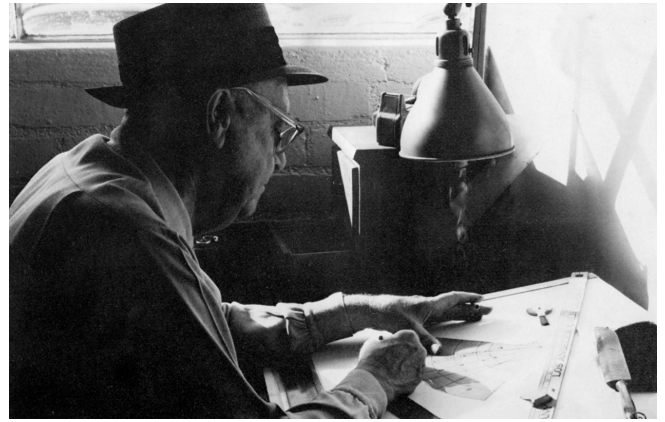
animation. So Dunn — who had produced opticals

for every film O'Brien worked on at RKO — hired the veteran animator to supervise that portion of the project. Meanwhile, wire work maestro Howard Lydecker had been signed to supervise the overall miniature effort, which was also to include a considerable amount of high-speed photography. A ten-foot replica of the principal building was erected, along with several adjacent structures, and together with Film Effects' director of photography James Gordon, matte painter Howard Fisher and others, OBie and Lydecker spent several months working out ways and means of achieving the desired end.

Marcel Delgado was hired to make miniature models of the actors involved in the sequence. For economy, the producers wanted him to make only one miniature figure and then duplicate the others from it. Delgado protested, arguing that Jonathan Winters and Mickey Rooney were not at all alike physically, and that to make all the models identical would cause the animation effects to appear very artificial — particularly in the 65mm Ultra-Panavision format being used in the picture. Delgado finally won his point and ended up making three sets of each of the actors, ranging in size from one-and-a-half to twelve inches in height. Fully articulated armatures were out of the question, however, and so Jim Danforth — who did most of the animation with the intermediate one-inch-scale puppets — had to wrestle with simple wire-based skeletons. Ultimately, he was to complete seventeen stop-motion shots, only a couple of which made their way into the final film.

It was during the preliminary production work for *Mad, Mad World* that the trade papers suddenly announced that John Beck, who had not contacted OBie for many months, was at the Toho Studios in Tokyo putting final touches on *King Kong vs Godzilla*, a quickie film in which Kong was grotesquely portrayed by a man in a monkey suit. OBie was heartbroken. All the time, effort, and expense of developing his story had come to less than nothing.

Preproduction on *Mad, Mad World* was taking its toll in other ways. OBie spent a good deal of his time brainstorming ideas for the sequence — one of which would have had the building undergoing demolition at the time and would have featured some of the characters clinging desperately to a wrecking ball — but he was disappointed that so few of his suggestions were given any



*Linwood Dunn hired the veteran animator to work on the finale of *It's a Mad, Mad, Mad, Mad World* at Film Effects of Hollywood. Several months into the preproduction, however, Willis O'Brien was stricken with a massive heart attack and died. This last photo of him was taken only a few days before his death in 1962.*

consideration. Then, too, OBie was seventy-six years old and had not worked steadily in quite a few years. The combination of the workload and his personal frustrations tired him rapidly, but he was not too concerned. He had expected it would. Around noon one day at the Film Effects facility, OBie felt as though he had indigestion and a slight pain in his chest. He went home after a while, went to bed, and had a light dinner. Later, he got up to watch television with his wife, and during the evening was struck with a heart attack. Darlyne heard a short gasp and saw him fall over on his side. She called the emergency squad and they arrived within moments to administer oxygen, but it was too late.

Willis O'Brien died on November 8, 1962. As had been his wish, his body was cremated, and his ashes lie in the Chapel of the Pines in Los Angeles.

A photograph of Kong atop the Empire State Building first drew my attention to the obituary page of the New York Herald Tribune on the morning of November 12, 1962. "Willis O'Brien, Monster Maker For Animated Movies, Is Dead." The four-day-old news brought with it a flood of emotions and memories, and at the same time provoked within me an urge to delve into the life and career of a man whose work had so profoundly influenced my formative years. In the weeks and months to come, I made contact first with Darlyne O'Brien, and then with others of his friends and associates. Each had a wealth of stories and anecdotes, and from the cumulative recollections of a dozen memories the story of Willis O'Brien's bittersweet life slowly came together. When an earlier version of this manuscript was published in the Autumn 1973 edition of Focus on Film, I had occasion to publicly express my thanks to Merian C. Cooper, Marcel Delgado, Ralph Hammeras, Ray Harryhausen, Mario Larrinaga, Billy Richards and Carroll Shepphird. Sadly, all but two of these film pioneers have now passed on.

For this revised and expanded edition, further acknowledgments are most definitely in order. The photographs which grace these pages have been drawn largely from the scrapbooks of Willis O'Brien, made available through the courtesy of his wife Darlyne, to whom I am additionally indebted for the gracious-ness with which she has borne my many requests over the years. My sincere appreciation also to Murray Glass for furnishing me with the surviving remnants of O'Brien's earliest film work. And very special thanks to Dave Allen, Jim Danforth, Paul Mandell, Ted Newsom, Al Taylor, George Turner, Val Warren, Steve Wilson and Mark Wolf — each of whom, in varying ways and to varying degrees, provided me with an abundance of supplemental photographs, additional research material, anecdotes and miscellaneous esoterica. — Don Shay

INTRODUCTION

I believe it to be true that few live actors can claim the dynamic personality, charisma, screen presence or whatever you may want to call it, that was projected by King Kong. It is even more remarkable — particularly to the uninitiated mind — that this great ape was but a miniature super-robot made up of steel joints, sponge rubber and rabbit fur. Its life-giving force was that of the process known as stop-motion photography. In a way, Willis O'Brien could almost be called a twentieth century alchemist who created the successful homunculus.

In late 1945, I had the great pleasure of working with OBie during the preparation of *Mighty Joe Young*. His excellent ability as a sketch and continuity artist was equaled only by his talent for being able to put on the motion picture screen, in dimensional form, the most amazing photographic illusions.

With a few quick strokes of a carbon pencil, and a smudge or two of powdered charcoal, he could give birth to a cowboy, a horse, a prehistoric dinosaur or a helpless girl in the clutches of a giant gorilla. The next step was to transpose his two-dimensional drawing into a convincing three-dimensional image of the fantastic. Motion picture film and the camera, along with tons of patience required to move a miniature creature a millimeter at a time, were the catalysts that made his images appear real.

Willis O'Brien was truly a distinctive artist of prolific imagination, as well as a technician extraordinaire. In 1925, Conan Doyle's *The Lost World* was able to be realized as a motion picture only because of OBie's early experiments in dimensional animation. *King Kong*, in 1933, was of course his crowning achievement, enhanced by the addition of sound effects and music.

In the hands of Willis O'Brien, a new art form was born — a singular art form through which animated sculptured figures could become leading characters for exciting live-action adventures into the world of the fantastic.

Ray Harryhausen

